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The Allocation of Health Care Resources: Ethical and Economic Choices, Conflicts and Compromise

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Commission d'enquête
sur les services de santé
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THE ALLOCATION OF HEALTH CARE RESOURCES:
ETHICAL AND ECONOMIC CHOICES, CONFLICTS AND COMPROMISE

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THE ALLOCATION OF HEALTH CARE RESOURCES:
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Converging Concerns

There is a burgeoning interest in the ethical and economic determinants of health policy and the allocation of health care resources. This is evidenced by a veritable plethora of conferences, symposia, special commissions of inquiry, and the increasing literature in the domain of biomedical ethics and economics. As will be apparent from this study, the convergence of interests can be attributable to a number of factors including, perhaps most importantly, the phenomenal growth in the innovation and diffusion of medical technology, increasing disquiet about the costs of health care, the growing recognition of patients rights, the importance of examining public policies in terms of their effects on the distribution of benefits and burdens, the proper role of economic analyses as a determinant of decisions regarding the allocation of health care resources, and the realization that ethical choices can have major economic ramifications.

Traditionally, biomedical ethicists concentrated almost exclusively on issues that arose in, or were derivative of, the doctor-patient relationship (for example, euthanasia, informed consent, physicians' obligations to inform patients, whether it was ethical to withold information or even to deceive patients about their condition, definition of death, concept of personhood, and obligations to feed the irretrievably dying patients). As well, they were concerned with ethical and legal issues that were derivative of the patients' rights movement (for example, the right to refuse treatment and the limits to such rights, the legitimacy and need for living wills, access to patients' medical records, confidentiality of health records and consent issues relating to minors and incompetents). Recently, however, their attention has turned increasingly to the allocation of health care resources, with particular regard to the question of distributive justice, and its implications for health policy. Other allocation issues that have concerned biomedical ethicists include how and on what basis life-saving medical resources (for example, transplantable organs, intensive care units) should be distributed when the aggregate need is much greater than the availability of resources; the moral legitimacy or otherwise of allocating resources on the basis of age; obligations of society to undertake biomedical research to benefit persons with particular disabilities or diseases or future generations; the ethical bases for policy initiatives in disease prevention and health promotion that regulates or affects lifestyle choices of the public, and the validity of using market mechanisms to allocate health care resources generally or in specific instances such as blood, blood products, organs and other human tissue.

Thus, two general trends are evident in describing the major concerns of biomedical ethicists. Firstly, there has been a broadening of their concerns from the individual-specific moral questions to issues that concerns society in general. Secondly, there has been parallel widening of concerns from debates and discussion of ethical principles that are derivative of the doctor-patient contact and patient rights to the allocation of health care resources and public policy issues.

Interestingly, in the case of economists, these trends are virtually reversed. The discipline of economics as applied to the question of the allocation of health care resources may reasonably be characterized as being suffused by utilitarianism. Economic analyses typically treat each individual's health care needs impartially and equally and attempt to maximize the aggregate net benefits or some similar criteria. Economic "morality" displayed in cost-benefit or cost-effectiveness analyses is best described as "statistical morality". More recently, the impartiality and statistical morality of economic analyses has been found wanting for purpose of some, if not many, resource allocation decisions. Economists themselves are increasing cognizant of such critiques and the need to consider other ethical norms and perspectives in making allocation decisions and health policy generally.

Economists, especially those of the neoclassical persuasion, have traditionally been concerned with issues of allocative and technical efficiency in health care markets. Conventionally, allocative issues were approached through the exmination of various forms of market failure. "Market failure" was viewed as a necessary but not necessarily sufficient condition for government intervention in private consumer and producer decisions about the allocation of resources. Thus, the provision of health services that were essentially public goods (e.g. immunization), and services that featured various types or degrees of externalities (e.g. basic medical research) were justifiably financed by government. Public regulations were legitimate if their intention was to correct for imperfections on the supply side (eg. price advertising, reforming competition policy to counter the professional regulations or etiquette that inhibits competition) or on the demand side (eg. state sanctioned professional licensing, provision of information, product safety regulations, system of torts and legal liability). Equity and distributional questions were often addressed as an afterthought, with preference for solutions involving income transfer mechanisms or voucher systems rather than in-kind transfers. Also, categorical rather than universal schemes were advised.

Reality does not conform well with neither the prescriptions nor the proscriptions of economists. Most pertinent for the purposes of this discussion, is that Medicare in Canada and similar programs in most of the western industrialized countries exist in spite of many economists' counsel against such publicly financed, comprehensive and universal schemes.

Recently, economists and policy planners generally have become more conscious of the connection between ethical aspects of health policy and resource allocative decisions. One contributing factor is the very existence of Medicare-like programs which are based on a societal ethic that requires equitable access to health care services. Another factor is undoubtedly the suspicion that rising health care costs have not provided a commensurate increase in benefits in terms of reduction in morbidity or premature mortality or other measures of health status.

The same time that the dominant health policy concerns have been shifting from one of distributive justice to those of efficiency, effectiveness and cost-containment, there has been a growing appreciation of the conflicts between the two sets of objectives, as exemplified by the recent passage of the Canada Health Act. The Act in effect declared that some cost-containment options such as physician extra-billing, hospital user fees and the disenfranchisement of persons through the use of insurance premiums pose too serious a threat to the distributive justice features of Medicare. Another confounding factor and one which is not widely appreciated is that an equitable distribution of health care services, however defined, has failed to bring about a commensurate equality in health status across the various socio-economic groups. This paradox obviously begs the question as to just what are our health policy objectives: to equalize health status or merely to equalize access to health care services? If it is the former, is the emphasis on distributive justice focussed on health care services justified?

It has been suggested that the normative aspect or just what the distributive role of health services ought to be needs to be re-examined. It might be argued that the degree of political consensus which existed around Medicare-type programs was not due to fundamental agreement about the proper end of health policy or belief in distributive justice, but rather as a result of "the residual beneficiary of economic progress" sustained during the post-war period. In a no or slow growth economy, the argument goes, there would undoubtedly be sharper controversy about both the level of health expenditure and the distribution of its burdens and benefits. In brief, the underlying political controversies on health policy may have been merely dormant over the past three decades, waiting only for the right social and economic circumstances to bring them out in the open.

However, Canada has certainly experienced economic difficulties since the inception of Medicare and the merits of this policy has been examined and reexamined on several occasions, the most recent being the debate and enactment of the Canada Health Act, which, incidentally, received unanimous support by all of the federal political parties. There is no doubt that Canadians genuinely support Medicare and that major alteration to it would be politically risky for any government, federal or provincial.

One could, of course, argue that Medicare is not so much concerned with distributive justice but is simply an instrument to pool the financial risks of illness. A public insurance plan was chosen over several private insurance plans because of economies of scale and because of the monopsonistic power that one insurer commands in regulating provider prices and health care costs generally. While such a view is certainly consistent with our present system, both a historical review and current analysis of Medicare clearly indicates that this was not the central rationale for the development of our public insurance programs. In Canada, Medicare is widely perceived as embodying an egalitarian concept of distributive justice and whatever other merits it may have are only incidental.

One of the most important explanation for the fact that policy analysts are increasingly cognizant of the ethical implications of resource allocation decisions is related to the truly remarkable growth in medical technology. The consequential expansion in the range of medical services that can be provided inexorably increase health care expenditure. This fact in and of itself is not particularly meaningful. Some medical innovations have been retrospectively judged to be horrible failures. Most have yet to be evaluated. Many are alleged to be beningly inefficacious, while others have been immensely successful bordering on the miraculous. To economists and health policy planners the real question about medical technology and of devoting even more resources to the health care delivery systems generally, is the pay-offs in terms of improved health that such investment of resources is expected to yield. But their concern with unwarranted cost increases is often juxtaposed with the seemingly irresistable promise of life-saving medical technologies creating obvious tensions between the ethical and economic objectives of public policy. The dilemma is obviously more concrete and controversial, if a public policy decision to forgo the adoption of some technology condemns some patients to continued illness, disability or sometimes even to death. A particularly vexing issue is the right of the elderly in relation to their access to scarce biomedical resources. Recent expressions about the "high cost of dying" may simply be seen by some as a statement of fact. Others may well be disquieted by such expressions fearing that the concern about the high costs is merely a precursor to demands for less health care for the dying, whether they be the elderly or the very young (eg. neonates). If allocation decisions appear to be or are intended to reduce the availability of health care services to targeted or identifiable groups, important questions of distributive justice arise not to speak of values such as the sanctity of life, equal respect for all persons, and the autonomy of patients or their families.

What is sometimes overlooked in the ethical and economic discussion about the allocation of health care resources is that, in the world of scarcity, any conceivable configuration of the allocation of resource will entail some loss of life, continued disease and suffering, at least some of which may quite fairly be described as avoidable. In that sense, failure is an inescapable result of scarcity. Our task is to so allocate resources as to minimize the failure as defined above, and to ensure that the burden of such failure is distributed as fairly as possible. It is a task that no one discipline is uniquely competent to carry out.

It is important to recognize that the tensions between ethical and economic determinants of resource allocation decisions exist at both the macro and micro-allocation levels of decision-making. The cost and limited availability of almost all of the lifesaving or crisis intervention therapy has focussed both the economists' classic problem of scarcity and the necessity of making difficult moral choices at the level of specific hospitals as well as the bureaucracies of government. That ethical dilemmas were frequently encountered in clinical settings has always been acknowledged. While many public officials pretend otherwise, macro-allocation and budgetary decisions are not ethically neutral. Public decisions to permit or prohibit the use of certain medical technologies or fund the activities of clinical researchers all indirectly determine the boundaries of private decision-making confronted by individual patients, doctors and hospitals. While the bureaucracies are removed from the specific and concrete cases of individual patients' needs that may not be fulfilled because of their choices about resource allocation, they are hardly ignorant of such unmet needs. The distance between those who make the macro-allocation decision and the bed-side micro-allocation choices faced by physician is in itself a source of conflict. It is plausible that the technocrats and bureaucrats are more likely to allocate resources on the basis of economic evaluations and criteria which mnay overlook or disregard to an unwarranted extent, ethical aspects of their decisions.

It is important to note that economic and ethical considerations of health policy are not always in conflict. Indeed, they sometimes point to the same public policy option as, for example, in the case of promoting palliative care facilities, the patients' right to refuse medical treatment and the prohibition against the commercialization of human organs. However, more often than not there are conflicts, and despite the greater appreciation of this fact, public policy determination is far from clarified or simplified.

In the following sections specific issues that reveal ethical and economic determinants of health policy are discussed. It is hoped that the issues selected for discussion are of considerable relevance to health policy debates and health care resource allocation decisions in Canada. The selection of issues were also made to illustrate the many situations in which ethical and economic criteria or arguments conflict and others where they do not. There is no doubt that allocation decision are complex and quite often indeterminate, and therefore have to be resolved through the political process. Nevertheless, knowledge of the economic and ethical aspects are important, and even if they do not yield definitive answers to many allocative issues, they may inform and guide the policy and allocative decision made by governments and health care organizations.

Medicare and Distributive Justice

Medicare embodies an egalitarian concept of distributive justice. Its raison d'être is to assure access to medically necessary hospital and physician services to all Canadians solely on the basis of need and not on their ability to pay or other social or demographic criteria. It was founded on principles on universalism, comprehensive coverage of health care services, and where all persons are entitled to services on uniform terms and conditions. Inherent in these objectives is the notion that governments should underwrite virtually all of the resulting expenditure for the insured services.

Economists do not and cannot justify Medicare on purely allocative efficiency grounds. To be sure there is justification for government intervention in health care industry or the provision of some service for reasons of allocative efficiency but they do not amount to a justification of Medicare as defined above. Thus, Arrow (1963) argued for government intervention because of the uncertainty in the demand for and supply of medical services and the presumed lower transaction costs for public insurance in comparison with private insurance. Weisbrod (1964) pointed out that the optional demand feature of health facilities (eg. hospitals) may make purely private provision suboptimal. Pauly (1971) has examined the implications of various externalities in the medical care market which calls for government intervention.

Economists recognize that one of the major objectives of public health insurance programs is to redistribute income or wealth from the non-poor to the poor, except that the redistribution take place the form of entitlement and use of services rather than in general purchasing power (Blumstein and Zubkoff, 1973; Manga, 1978). It can be demonstrated that specific subsidies or in-kind transfers are less efficient methods of redistributing income than money transfers, because they involve interferences with consumer preferences which lead to distortions in the allocation of resources. While true, this view ignores two interrelated arguments that favours in-kind transfers, namely the notion of "taxpayer sovereignty" and the nature of the interdependence in utility functions which underlie society wish to transfer incomes in the first instance. The hypothesis is that the non-poor receive satisfaction from and hence have "external" demands for the consumption of health care services by the poor and the medically needy. Such "externalities" cannot be effectively translated (internalized) through the normal market mechanisms. Private efforts through charities and voluntary organizations and price-discrimination by physicians or hospitals, involve free-rider situations and make suboptimal results likely. The avoidance of suboptimal transfers necessitate compulsion through government intervention.

Society may well choose not to ignore inequalities in both income and consumption of certain goods and services. That is, rather than poverty alone, it is consequences of poverty in terms of inadequate consumption of education, health care services and housing by the poor that impose external diseconomies on the non-poor members of society. Citizens may be reluctant to finance substantial money transfers fearing that the transfers may not be spent in a manner that will significantly reduce the inequalities in consumption that gave rise to transfers in the first place. Whereas money transfers may be preferred to in-kind transfers by the recipients, in terms of welfare gains the latter may be preferred by the taxpayers. While such in-kind transfers may or may not presuppose paternalistic attitudes, it is often argued that society will in the aggregate be more willing to make a bigger effort to redistribute income and opportunity in this manner than under a purely monetary transfer scheme. In any case, the relative efficiency of the two forms of redistribution cannot be judged independently of the distributive objectives of society, which of course, can only be decided through the political process.

All of these arguments thus far do not justify Medicare. In fact, direct public provision for the poor and government subsidization of private insurance purchases of the poor may well satisfy the concerns expressed above. Such categorical schemes, indeed, have characterized the government's role in the United States.

Three further arguments, all of which transcend the usual "market failure" type argument adduced thus far to support government intervention in the allocation of health care resources are needed to justify Medicare. The first is a claim that "health care is a right" of all citizens. While utopian and vague and one may genuinely wonder what it really means, its economic implication is clear. Health care should be provided free of direct charge to individuals on the basis of medical need. Individuals are assumed to value equal access to health care services in the sense that what one receives by way of care is totally independent of one's ability-to-pay.

A second argument for Medicare, is that, without it, dual delivery systems will develop (or persist) - one for the relatively affluent, another for the poor. A non-universal system, one that excludes the better-off citizens from receiving government support, it is claimed, may result in inferior care for the poor. Equality in the level, range and quality of services can best be fulfilled through a scheme such as Medicare. This argument assumes that non-compulsory and non-universal government insurance scheme for health would be for "basic" health services, with quantitative and qualitative inequalities remaining for additional services.

The third argument for Medicare is that when everyone is covered by the same health care system, improvements demanded by the elites will improve the system for all, and conversely, demands for cut-backs and retrenchments affects everyone. There is thus a greater likelihood of preserving the entitlement gains of the poor in a universal system than under a system in which there are alternative schemes for different groups.

To recapitulate, Medicare is not merely a response to the failure of the market to assure an efficient allocation of resources. More importantly, it is a response to fulfill specific distributive objectives of society. Finally, it can also be said to be politically pragmatic by allowing everyone access to essentially the same level and quality of services.

Ethicists and philosophers have approached the principle of distributive justice - the obligation of society to provide health care services - in quite different ways. In what follows the basic position and arguments are presented, mainly to illustrate and highlight the fundamentally egalitarian nature of Medicare.

Nozick (1974) and Sade (1971) have suggested what may be described as the libertarian entitlement theory of justice, wherein a person is entitled to what one possesses provided it has been acquired justly. The role of the State is limited to protection against unjust appropriation. No one has a claim against others to have any needs met unless commitments have been made through free and voluntary contracting. People may, of course, act charitably toward the poor, but they have no obligation to do so. There are no rights to health care. Under this theory, the allocation of resources is determined by the free, unfettered, laissez-faire market enterprise system. The libetarian entitlement theory would justify marked inequalities in access to health care provided they derive from free choices made by patients, providers and society in general.

This theory can be criticized on two factual bases. The first is that the existing distribution of wealth and resources over the generations has been so complex and so unfair that no one in the present can really claim that he or she possess the property, skill, knowledge, etc. "justly" in the sense required by the entitlement theory. Physicians, for example, always possessed class, familial or status advantages or have enjoyed large public subsidies for their education. As well, the public protected their practice by granting them to various monopoly powers. Advances in knowledge and medical technology too have a large element of public support. The second criticism is essentially political and asserts that a society based exclusively on liberty and the rights of property is inherently unstable. Nozick recognized the possibility of violence and unjust appropriation and thus his principle of liberty requires "a side constraint that prohibits aggression against another" (Nozick, 1974, 26). However, gross inequalities will force the poor and the less well endowed to reject this libertarian side constraint, compelling some positive redistributive efforts by government for reasons of politically and social stability.

Another approach to distributive justice in health care is provided by utilitarianism. As was suggested earlier this is favoured, consciously or otherwise, by economists and health planners. The essence of utilitarian approach to resolving conflicting or incompatible claims over limited resources is the maximization of the net benefit for the greatest number in the community. The utilitarian approach in principle takes into account benefits and costs of alternative allocation of resources and gives equal weight to each individual's benefit or cost. This "neutralism" between individuals may or may not be acceptable depending on the allocation issue in question. When applied to questions of allocating health care resources some ethicists fear "that with any plausible quantification of the benefits and costs, the retarded are likely to lose" (Veatch, 1976, 259). The probability of unfavourable decision with regard to the underprivileged, the poor, the very sick, the aged and the disabled is a common criticism of utilitarian ethics (and economics).

Another criticism of utilitarianism is that benefits and costs from health care allocation decisions are often particularly subtle and nonquantifiable: pain, suffering and premature death. There are costs not only to the individuals or families directly affected by the decisions, but society generally (i.e. third-party or external effects). While these estimation difficulties are real and often insurmountable, the more serious criticism is that the utilitarian approach tends to ignore the distribution of benefits and costs: it merely permits allocation decisions on the basis of aggregate net benefits or similar criteria. That is, if enough people receive even a small benefit of some allocation decision, it is plausible that even enormous harms or costs to a sizeable minority will be outweighed by the aggregate benefits. In short, it skirts the question of what is a just distribution. It is difficult to see how the utilitarian ethic would justify the philosophy and principles underlying Medicare in Canada.

Rawls (1971) offers another theory of distributive justice that may be applied to health care. His social contract theory of justice requires people to act rationally under a "veil of ignorance" (that is, they do not know their original endowments of property, intelligence, opportunities, etc.) in order to establish the basic principles for a just society. Rawls asserts that their first moral principle would be the equal distribution of liberty. More pertinent for our purposes, his so-called second principle of a just society - sometimes called the maximin theory of distributive justice - requires that society organizes social institutions and policy so as to improve the lot of the least advantaged." The welfare of the least well-off takes priority in an absolute way the maximization of aggregate net benefits of the society or over efficiency objectives in general. In contradistinction to the utilitarian ethic, Rawls gives greater weight to the underprivileged and disadvantaged. However, the maximin theory permits inequalities of access and may even consider such inequalities as just. Barry (1973) and others (Ake, 1975, Veatch, 1976) suggest that in some situations, rational contractors might opt for a more radically egalitarian principle that would maximize equality of outcome than the maximin strategy.

The egalitarian theory of distributive justice have many adherents and there are alternative arguments for the advocacy of an equal right to health care. Green (1976) argues that health care should be seen as a primary social good, like liberty, and thus distributed according to Rawls first principle (i.e. equally to all). The case for equal access on the basis of that health care is more fundamental than other goods is not compelling or convincing. We do not distribute food or housing in this manner and for most people these goods are as necessary as health care. A more convincing ethical case is presented by Veatch (1976B). Arguing that if we are to select an institutional arrangement that would yield distributive outcomes as closely as possible to that which would obtain in a just world, we would choose to establish "a uniform health care system with one class of service available for all" (Veatch, 1976B, 275). The underlying ethic is that "people should have services necessary to give them a chance to be as close as possible to being as healthy as other people" (Veatch, 1976B, 275). The reason why services should be free is that it is impossible to determine what would be one's fair share of health care resources in proportion to one health care needs.

Norman Daniels (1983), offers an interesting defence of an egalitarian approach to medical care. Stating that normal human functioning is absolutely essential for equal opportunity in our society, he argues that access to health care services is therefore a prerequisite for fulfilling the principle of equal opportunity. Thus the "freedom" to function as a whole person in society, requires access to health care services, contrary to the claims of libertarians who argue that "the right" to health care diminishes freedom or liberty of all members of society. It is the preservation of freedom and equal opportunity that justifies a right to health care. Secondly, Daniels offers an interesting limit to the allocation of resources to fulfill this right. The resources needed for this purpose should be limited to allow "species-typical functioning" and that society can not be held hostage to the idiosyncratic and expensive preferences of particular individuals. He acknowledges that health care services have no special status over other goods and services that are required for equal opportunity such as education, legal services or housing.

An important debate in the ethical and economic literature on rights to health care is whether equal access or a decent minimum should be operative principle assuring the presumed right. Egalitarians insist on equal access. Fried (1983) has suggested that equal access is unwarranted and unaffordable. It is anamolous to insist on equal access to health care when we tolerate inequalities in many other goods and services and which we find morally acceptable. He argues that society should commit itself to assuring everyone of a "decent minimum" health care.

In opposition to Fried, Gutman (1973) suggests that an egalitarian equal access principle is a social ideal. Drawing on the values of equal opportunity, self-respect and equal relief from pain, she posits an egalitarian principle that if anyone has access to a particular health services, then everyone in similar straits must also have access to them, resources permitting.

Such a principle demand equal access to needed care offered by a one-class health care delivery system. In its extreme form, this principle would prohibit the establishment of a private health care system alongside the public system of guaranteed equal access, in which the wealthy obtain extra medical services not available to those provided by the public system. Gutman suggest that it is not immoral nor paternalistic to restrict such private health care systems, or to quote Nozick, such "capitalist acts between consenting adults", even though on the face of it, it restricts the freedom and self-determination of health care providers and consumers.

It is difficult to operationalize Daniels' concept of "species-typical functioning" as the upper limit to the allocation of resources for health care. Neither ethics nor economics can provide clear answers to the issue of how much resources society should devote to health care services. While Medicare appears to be too utopian and egalitarian to its critics, governments has always recognized that society cannot and will not satisfy all health care needs. Health care needs appear to be virtually infinite. Also, with the recognition of broader definitions of health, governments have come to realize the importance of determinants of health other than medical and hospital services. As well, there is abundant evidence that the value society places on saving lives is not and cannot be infinite. The need to trade off health care versus other social goods is both obvious and inescapable. Rhetoric aside, Medicare is perhaps more realistically thought of as defining a situation in which everyone has an equal risk of having unsatisfied needs.

Medicare replaced the distributive ethics of libertarianism where allocation and rationing is achieved through prices, incomes and wealth by an egalitarian distributive ethic where rationing is done by other mechanisms such as waiting lists, random selection, queuing, control over capital facilities and regional scarcities of resources. Medicare-like schemes do not promise nor provide an unlimited right to health care services but only within the constraints of available resources. Earlier opponents of Medicare failed to appreciate that Medicare will prove to be affordable largely because of the government's ability and willingness to limit the budgets and resources devoted to health care services.

As to what constitutes an appropriate level of resource to assure the fulfillment of the principle of distributive justice implicit under Medicare and which at the same time appropriately allocate resources among society's competing wants is an immensely complex issue. The macro-allocation question, in the words of a reknowned bio-ethicist, is "almost, if not altogether incorrigible to moral reasoning", and the economist might as well add, "and to rational economic determination." The question in practice is of course resolved through the political processes that reflect as best as possible the values, preferences and priorities of society.

Whether these processes perform this task sufficiently well is an interesting question. There is the obvious risk where the majority can coerce the minority into accepting a level of unsatisfied needs that the minority would not have chosen itself. Also under our liberal democracies, political parties do not offer discrete, single policies to the voters but rather "full-line supply" or policy bundles, thus weakening the extent to which society can determine its own policy in specific matters. The best that can be said for our current system of decision-making is that while it is unavoidably a hit-or-miss affair, we have yet to develop better alternatives.

It is important to distinguish between the different ways ethical and economic considerations impinge upon the various decision-makers. The physician is not a policy maker and should not be expected to make the complex trade-offs between national priorities in the context of his own practice. The physician's responsibility is to the patient and society has good reasons for insisting that he or she unstintingly fulfills that responsibility of personal care, given the available resources. The accountability and obligations of a physician are not identical to that of a bureaucrat. The intensity of the ethical dilemmas and the nature of the conflict between efficiency and effectiveness versus ethical considerations are different for the two types of decision-makers. In general it is naive, impractical and unfair to insist that physicians take into account the economic implications of the difficult choices that they sometimes have to make in treating their patients. This is not to suggest that they should never be required to weigh the costs of benefits of their decisions but that there are serious ethical and practical limits to their ability in their roles of physicians to do so. To borrow two concepts from Max Weber the conduct of physician cannot be assessed in purely "goal-rational" terms (that is, in terms of effectiveness and efficiency in statistical terms) but also, especially in instances of rescue or crisis-intervention, in "value-rational" terms (that is, in terms of the symbolic values, attitudes and virtues a policy or action expresses).

There are many cases in medicine where it is important to preserve society's cherished myth than an individual's life was not sacrificed to save money. Indeed, it is not just physicians and health care providers but society in general that is willing to devote enormous amounts of resources -- and in ways contra-indicated by cost-benefit, cost-effectiveness or risk analysis -- to save identifiable lives as distinct from "statistical lives." Society values symbolic gestures to reaffirm its virtue and character or what is sometimes called "agent morality." There are, of course, numerous illustrations of this. Much energy and expense are expended in highly publicized cases of life extending technologies such as organ transplantation. Recent instances of mass appeal for organ donations are yet another manifestation of the same phenomenon. (It might be noted here that both the shortage and the solutions to the shortages of solid human organs raise profound ethical concerns. However, should the problem of shortages be somehow resolved through changes in policy in donating organs, organizational changes in procuring organs or perhaps even the commercialization of organs, the economic implications of such development could be considerable). Vast sums of money are spent in search and rescue missions when an airplane is downed in the north or workers trapped in mines. The latter example is particularly noteworthy since many mining companies invest very little to prevent mine disasters even if they could save more lives in the long run for the same overall costs. The expenditure on an intensive care neonatal unit would save more babies and reduce more infant morbidity and handicaps were the same amount of funds used in a nutrition program targeted to pregnant teenagers especially those of the lower socio-economic population groups. The value-rational behaviour of physicians and the agent-morality behaviour of society is no doubt ethically motivated but is probably unsound economics and ill-advised as a general basis for the allocation of resources. If society were to increase its crisis or rescue intervention and life-extending budgets by withdrawing resources from elsewhere such as public health, occupational health and safety or traffic safety, it would result in the paradoxical result of society symbolizing its value or concern for human life by actually saving fewer lives. With the advent of a greater and expanding range of life-saving or life-extending technology and its obvious appeal to the public and health care providers, the prospects of reallocating resources from high technology crisis-oriented medicine to other forms of health care services, even if these are more cost-effective and save more lives, or to other areas of social policy, are rather meagre.

Yet, given the strong desire by governments and the public alike to contain health care expenditure and limit fiscal deficits, the search and need for efficiency is now greater than ever. Medicare, in its promise of assuring physician and hospital services to all, provides no concrete guidance to the allocative choices open to society other than requiring that whatever is provided should be "medically necessary." Since virtually all health care services offer some benefit to some patients and therefore can be construed as "medically necessary", the stipulation is much too weak and vague, and offers no practical or significant guidance to resource allocation decisions. Also, it is important to remember that programs and services other than Medicare have an important impact on our health status. Thus not only do we have to allocate resource wisely within the Medicare budget, but our aggregate expenditure on health care must be balanced and assessed against other spending on other social and economic programs. To put the case by way of an illustration, is it more ethical to ensure the jobless meaningful employment or access to a wider range of health care services? The answer is far from obvious, though it would hardly surprise politicians if a preference was expressed for more jobs.

Beyond these obvious macro-allocation issues, it is important to ponder over the fact that Medicare in Canada has succeeded in bringing about a degree of equity in access to hospital and medical services, probably unmatched by any other country. There is abundant empirical evidence to indicate that the distribution of services is primarily and largely determined by health care needs. There is, however, also no doubt that the poor in Canada have considerably inferior health status in terms of mortality or morbidity relative to the non-poor, despite the equitable access to and, in fact, their greater use of health care services. Some of this is perhaps due to reverse causation, that is, the effect of disability and illness on income. However the relationship between poverty and higher mortality and morbidity is marked even among children. This observation is also common to other countries. It is difficult to resist the conclusion that equalization of access to health care services does not result in equality in health status. This paradox is likely to worsen since lifestyle modification of the seventies has been far more effective in changing the behaviour of the richer and better educated groups, as evidenced in the areas of smoking, nutrition and physical activity. A much greater effort to reach the lower income groups is needed if society wishes to close the gap in health status between the different groups.

This is not to be construed as an attack on the principles that characterize Medicare. The issue is not with Medicare per se. The essense of Medicare is to assure access to necessary medical services to those in need and it fulfills this objective very well. The paradox raised here only questions the wisdom of the way we have allocated our resources, and suggests that alternative allocations could be more beneficial in terms of the health of Canadians. What should be the balance between treatment and prevention and health promotion activities that were so highly recommended in the renowned Lalonde document of more than a decade ago? Canadians appear to have steadfastly maintained their conviction in the principle of distributive justice when applied to access to health care services. It, indeed, would be ironical if the same society would wish to see existing inequalities in health status continue or become worse over time.

The issues raised here are but a few of the ethical and economic policy dilemmas faced by society. We have yet to consciously decide on how much unmet need we should tolerate, and how much health care and modern medical technology should be provided through our programs. Though such decisions always do get made, they are probably arrived at by a combination of incremental budgeting and response to moral and political pressure. Anchoring allocation decisions on the basis of economic considerations in terms of efficiency and effectiveness in conjunction with ethical considerations is, of course, a difficult matter, not least because it requires the kinds of information and analyses that we do not now readily generate. Long range decision-making with a genuine effort to anticipate and plan for the economic effects and ethical aspects of new developments in medical technology is rare. Yet the march of medical technology and the ever pressing economic limits compel us to begin to make the hard choices we have not really had to make so far.

In the following section we examine whether we are justified in limiting the right to health care assured by Medicare to those who have suffered illnesses or disabilities because of their lifestyles or the undertaking voluntarily risks to their health. Similarly, are we justified in imposing monetary costs to such patients in the form of a special user fee or taxation of certain goods (alcohol or tobacco) in our efforts to contain health care costs and at the same respect certain principles of ethics and basic values of society.

Lifestyles, Responsibilities and Rights to Health Care

In April 1974, the Department of National Health and Welfare released a working document entitled "A New Perspective on the Health of Canadians", popularly referred to as the Lalonde document or sometimes simply as the "new perspective." It's essential message was that potential improvements in the health status of industrialized societies are more likely to arise from changes in lifestyles, social and physical environments, and biology, than in devoting even greater resources to the existing health care delivery systems. Medicare-related health care programs are only one component of the health field and the report leaves little doubt that it was both unfortunate and unwise that this component has received the overwhelmingly large proportion of health care resources and has been the almost exclusive focus of public policy over the past three decades.

The Lalonde document received an enormous amount of attention both here and abroad for a decade, but has evoked little policy development and legislative initiatives in Canada. The federal government is lacking in clearly articulated goals and the principles that should govern the design of the policies and programs in pursuit of these goals. There is also a lack of a clear notion of the resources to be allocated in order to fulfill the policy. Nor is there an appreciation of the regulatory strategy the federal government should adopt, either by itself or in concert with the provinces, to fulfill some of the general objectives that are stipulated in or may be inferred from the new perspective.

To be sure, there are projects/programs in the priority areas of smoking, alcohol and drug abuse, nutrition and diet, physical fitness, health risk assessment and lately some attempt to focus in on safety, stress and mental health. There is also research support in all of these areas. There is a much clearer understanding on the need to target programs to children, youth, women, low income groups, elderly and native people. There is emerging a better sense of the goals of promotion, avoidance of risks and health education. There is a greater appreciation of strategies to achieve those goals via public information, promotion of social and physical environment conducive to healthy lifestyles, self-help, mutual aid, citizen participation, health education and the incorporation of some of these with other social services and public programs. There is also greater awareness of the need to evaluate public programs and the necessity of planning and continuous resource commitment and so on. But these activities and knowledge have not been synthesized into a coherent policy. Indeed, there is a fair amount of ad hoc intervention and program development. What is also apparent is that most of the activities have concentrated on "lifestyles" issues and problems. There has been insufficient emphasis on the other areas highlighted in the new perspective.

While overall age-standardized mortality declined by about 11 percent during the nineteen seventies, and there has been a 25 percent decline inn mortality from both ischemic heart diseases and cerbrovascular diseases, further declines are quite likely with a continuation of changes in tobacco and alcohol consumption, animal and vegetable fat consumption, physical activity and other similar changes derivative of the new perspective. The need to heighten and boost existing programs, perhaps particularly in the area of health education, derives from troublesome and worsening data on mortality from lung cancer. The overall rate of mortality has increased and most noticeably so for women. As well, mortality from cirrhosis of the liver has risen for both men and women over the last decade. Mortality due to chronic obstructive lung disease caused primarily by cigarette smoking has risen markedly for women though it decreased for men over the nineteen seventies. The incidence of occupational injuries and disease has been and remains at a distressingly high level in Canada. Among native peoples further progress against a wide range of diseases is greatly needed. In brief, it can be argued that a greater effort is warranted in implementing the new perspective in order to change the existing patterns of mortality and morbidity.

It was pointed out earlier that the poor are in considerably inferior health status in terms of mortality or morbidity relative to the non-poor despite the equitable access to health care services. Differences in health status are likely to widen since disease prevention and health promotion activities of the seventies has been far more effective in influencing the richer and better educated groups. For instance, smoking cessation has occurred primarily among the better educated and higher income groups. This is also apparently so in the case of nutrition and physical exercise, and no doubt true of their physical and workplace environment. The poor also suffer from more frequent and longer bouts of unemployment which has been implicated in a number of health problems.

There is reason to believe that continued, or worse, growing disparities in health status could also provide ammunition to critics of Medicare. They will point to such disparities as evidence of the ineffectiveness of Medicare rather than failures in other public policies. This constitutes yet another reason why the new perspective philosophy needs to re-examined and additional resources should be allocated to programs that are feasible, cost effective and consistent with the ethical norms and values of society.

It is not the purpose of this study to assess the economic validity of the increasingly common advocacy of a greater allocation of resources for disease prevention and health promotion. Even if this is a valid policy direction in general, the real and more complex task for our health planners is the selection of specific programs and regulations that are cost effective. It is obvious that give the endless variations in the design and delivery of programs, selectivity is of the essence, given the controversial findings both for and against a variety of disease prevention and health promotion programs and activities to date. What is encouraging is that there are effective prevention/ promotion programs already in place and others may be in the offing. Of course, an energetic program of monitoring and evaluation is an essential aspect of any strategy of health promotion and disease prevention.

Recent empirical cost-benefit and cost-effectiveness studies have tended to find that some but by no means all prevention and health promotion programs concerning lifestyle changes, particularly those relating to alcohol and drug abuse, smoking, automobile safety regulation such as speed and use of seat belts, are economically sound investments or regulations. The recent studies are distinctly more positive than earlier ones which tended to be either sceptical or inconclusive about the value of public programs dealing with lifestyles issues. (It should be noted that economic evaluations of health promotion and disease prevention are often very difficult to execute adequately. Measurement of benefits and costs are far from easy, especially when the benefits often accrue over a very long time period, and when there are many and sizeable third party effects.) Similar positive conclusions have also been made for a variety of public health measures such as flouridation of drinking water, immunization against a number of communicable diseases, regulation of food additives, surveillance and inspection of food products. As well, there are select screening programs for the detection of diseases that can yield significant benefits such as for PKU in newborn infants and spina bifida cystica in the fetus. As well, selective and targeted (as opposed to mass) screening of adults for hypertension and certain cancers appear to be worthwhile. The case for screening in general, however, is poor and probably ill-advised.

Also ill-advised is the wholesale incorporation and integration of prevention and health promotion in medical practice or more generally in the health care organization. On the basis of existing evidence there is justifiable scepticism about "preventive medicine" and a growing concern about the potential "medicalization" of disease prevention and health promotion and the consequent expansion of the health care organization component of the system (the very thing that the new perspective is supposed to resist). There is simply no good case for generally including prevention and promotion services in the entitlement program such as Medicare in Canada. Indeed, it can be argued that the government should do more in the lifestyles and the social and physical environment areas so as to undercut and resist the growing demands by health care providers to expand the range and scope of insured services covered by Medicare, at least in these areas. The belief that preventive medical services should be generally encouraged is based on the prima facie belief that preventive medicine will not only improve health but will save substantial amounts of health care expenditure. Evidence thus far casts doubt on both of these assumptions, especially the latter. There may be a few very specific instances where these assumptions may be valid but they in themselves do not call any significant change in the current policy. Even in such cases, it would be wiser to provide such services through public health units or outpatient clinics and resist including settings such as physician offices. The danger in the clinical integration of health promotion (e.g. counselling and instruction in nutrition, alcohol use, exercise and other lifestyle issues) is that the resulting expenditures will be very difficult to control quite apart from the efficacy of the "clinical" provision of such health promotion services.

It is quite often suggested that Canadians are becoming increasingly more unwilling to accept the costly curative and institutionally oriented health care system that is alleged to have provided less than commensurate improvement to the overall health status. That alone is a justification for looking at the prevention/ promotion strategy more carefully to examine whether further allocation of resources in these areas are worthwhile.

The concept of prevention is multi-faceted. It can usefully be subdivided into three categories: there are primary, secondary and tertiary types of prevention activities. Primary prevention consists of actions to avoid disease or ill health prior to its manifestation or occurrence in a particular individual. Secondary prevention involves detection of a disease before its symptoms have become evident and intervention to slow it down or eliminate it completely. Tertiary prevention, which converges with conventional therapy, occurs after the disease or ill health has become clinically manifest, and attempts are made to arrest or alter its progression.

Primary prevention includes making individuals less susceptible to disease and poor health (e.g. through vaccinations), altering the physical (eg. reducing pollution) or socioeconomic environment (e.g. reduction of poverty and unemployment), and changing individual lifestyles and behavioral patterns (e.g. diet, smoking and exercise). It is the latter type of primary prevention that is the focus of the following discussion.

The impact of lifestyle on an individual's health has been shown by a number of studies. Lester Breslow, for example, offers seven rules for good health based on epidemiological evidence. They are: don't smoke, get seven hours of sleep each night, eat breakfast, keep your weight down, drink moderately, exercise daily, and don't eat between meals. At age forty-five, someone who has lived by six of these rules has a life expectancy eleven years longer than someone who has followed fewer than four (Bellow and Breslow, 1973).

Victor Fuchs (1974) contrasted two states (Utah and Nevada) that have roughly the same levels of income and medical care, but which exist at opposite ends of the health spectrum. For example, mortality for persons aged twenty to fifty-nine is approximately 39 per cent higher in Nevada than in Utah. Fuchs (1974, 53)states:

> What, then, explains these huge differences in death rates? The answer almost surely lies in the different lifestyles of the residents of the two states. Utah is inhabited primarily by Mormons, whose influence is strong throughout the state. Devout Mormons do not use tobacco or alcohol and in general lead stable, quiet lives. Nevada, on the other hand, is a state with high rates of cigarette and alcohol consumption and very high indexes of marital and geographic instability. The contrast with Utah in these respects is extraordinary.

From these two examples and many more available in the literature, it is undeniable that lifestyle does in fact play an important role in determining an individual's state of health. Health status is increasingly seen as correlative of lifestyle choices.

These results raise several interesting questions about the assumption of voluntary health risk by individuals and their rights to health care under Medicare. What kinds of economic intervention or regulatory policies can the government legitimately undertake to influence such adverse lifestyles. What indeed are the options and how might society rank order different lifestyle interventions.

If individuals are responsible for their own (ill) health, how does that affect their right to health care assured by Medicare? Some argue or suggest that the element of personal responsibility for illness and disease undermines if not negates the very notion of a right to health care. Others see no contradiction between the two but still question the fairness of a system that imposes a financial externality on all because of the health damaging lifestyle choices of some.

Veatch, an egalitarian on the issue of distributive justice, argues that "the principle of justice is concerned with distribution of social resources on the basis of need. But need has traditionally been thought of as being derived from natural endowments and forces - genes, bio-chemistry, the random movement of micro-organisms, and other factors beyond human control. In fact the classical formulation of the sick role includes the notion that one is not responsible for one's sickness... It surely must not have been these personal voluntary choices affecting health status that we had in mind when we defended the principle of right to health care equal in proportion to need" (Veatch, 1976B, 277-78). In short, it would be reasonable to differentiate health care needs resulting from voluntary choices from those resulting from causes beyond one's control in formulating an egalitarian theory of justice.

It should be noted that Medicare in Canada and similar schemes in other countries do not make any such distinction for purposes of entitling or assuring access to medically necessary care. Should it do so? Even Veatch and others like him, who make the argument that the principle of distributive justice is really limited to involuntary need for care, suggest that it should not. A compassionate society that establishes Medicare is also likely to arrange institutions and policies that even people who voluntarily acquired their poor health status through abuse of drugs, drunken driving, skiing, playing with firearms, etc. will not be denied access to care. "But this is not a matter of justice; it is one of compassion and of sparing the society the burden of seeing even the voluntarily needy suffer" (Veatch, 1976B, 279).

If persons are assured equal access to health care services provided through Medicare for reasons of justice or compassion, what point is there in distinguishing between voluntary and involuntary need? There is indeed no point if the practical result is the same as far as rights to health care is concerned. However, it has been suggested that the distinction is of some importance in that it provides a justification for reserving the "uniform terms and conditions" principle for involuntary needs only. Thus, while the voluntarily ill patients cannot simply be excluded from coverage under Medicare it has been suggested that unequal treatment of such patients is justified. This could take the form of a tax burden levied on the hazardous commodities they consume (eg. tobacco, alcohol), higher insurance premia, or an ex-post charge for the incremental health care costs imposed by the voluntarily sick or injured.

The objections to legislation or the imposition of economic liabilities on lifestyle choices can be divided into two broad categories, which may be labeled as the practical or pragmatic objections, and objections of principle. Each is discussed in turn. Some of the principal economic and ethical conditions which may justify government interference in matters of lifestyle are then presented to conclude this section.

The notion of making people pay for their profligate ways is a popular one. It is also an impractical and dangerous suggestion. There is a likelihood that economic penalties may be imposed on non-voluntary risks to health. Lung cancer is a result of a complex interaction of factors including genetic predisposition, personal behaviour, occupational and social pressures and stress, and environmental hazards. Many of the smokers acquired their addictive habit in their teenage years, most under peer pressure and enticing corporate advertising, and when they may not have had the rational capacity to exercise free and informed choice. Similarly, alcoholism may have a genetic component, family environmental influences, and a myriad of other reasons which taken together, calls into question the assumption of a voluntary choice by individuals. It is also clear that the incidence rates of many diseases correlates with social class, occupations, geography and other factors over which many do not have much choice. If so, then attributing personal responsibility to individuals with medical need is more like blaming the victim, and therefore violates the distributive justice ethic of Medicare, even if our conception of justice was meant to be focussed on involuntary needs for health care services.

Thus many ethicists and economists have decried the idea of imposing some monetary liabilities on patients for the presumed voluntary risks to health. Beauchamp (1983) contends that the emphasis on invididual responsibility serves merely to mask the many social causes of disease, and thus serves as a barrier to the promotion of policies and programs that could reduce preventiable injury and death. Those include the control of environmental and occupational health hazards, safer roads, reduction of poverty, and the like.

It is important to note one of the implications of this controversy. If it is true, as seems to be the case, that there are socially caused illnesses or risks to health, is there a corresponding obligation on society to reduce these risks to health? More to the point, if we can justify a right to health care services when sick, should there not be a corresponding, if not prior, right to have your health protected? After all, we do not usually provide health care services for its own sake, but to restore and improve the health status of the recipients of such care. If we indeed have a wider set of rights, specifically the right to have our health status protected and when sick, a right of equal access to health care through Medicare, it complicates greatly the issue of the appropriate allocation of health care resources. For now it is obvious that there are determinants of health other than health care resources that equally deserve our attention in making resource allocation decision concerning the health of society. The view that health care services are special and unique is somewhat diminished by the acknowledgement of the multi-factorial and multi-dimensional causes of ill-health and its improvement.

To return to the issue of individual responsibility for health care needs, if the proposed economic penalties are implemented, it should be clear that without being sure of the fundamental cause of disease or injuries, injustice cannot be avoided. However, to attempt to apply them with care and discrimination is practically impossible. We simply do not know enough to isolate the proportion of risks due to voluntary choice of lifesyles in individual cases. Arbitrariness would be a common complaint. The transactions and administrative costs will also be high and call into question the economic sense of the whole exercise.

Another complaint of injustice against economic penalties can also be readily made, if only select lifestyle choices are singled out for punitive taxes or certain diseases are subject to ex-post payment of costs by patients. Since there are innumerable behavioural risks to health, why select just a few for purposes of regulation or economic penalties. While there are no doubt some legitimate reasons for some types of regulations (for eg. protecting the young from becoming addicted to tobacco or other drugs, protecting persons against second-hand smoke) the case for economic penalties is much more difficult and arbitrary. Would we really impose an economic price for "abnormal" or promiscuous sexual activities or a "fat tax"? What about the high health care costs due to a disturbingly high incidence of sports injuries? Would type A personalities be subject to unequal treatment? The list can be extended ad nauseum.

All of the above is not to deny the existence or possibility of free and responsible behaviour or lifestyle choices. It is just that the complexities of designing and implementing economic penalties are such as to vitiate this approach as a realistic and just policy. There are no doubt voluntary individual choices of lifestyle that most would consider as not worthy of public subsidy, but it would be better to suffer the financial externality they cause rather than jeopardize the principle of distributive justice. In any case, there are other ways for society to reduce such unnecessary and undesirable costs to Medicare.

There are also ethical reasons against economic penalties and certain regulatory intervention intended to influence the public's lifestyle choices that adversely affect health. These objections can be divided into two main categories. The first invokes the principle of autonomy which requires that each person is the best judge of his or her own welfare. Although health is a good, it is a good whose enjoyment competes with other goods which we also value. With our moral, social and political traditions, the principle of liberty sets a presumption against governmental interference in matters of lifestyle and voluntary risk-taking. There is thus an unavoidable conflict between the goal of improving health status and an individual's goal to make his or her life what he or she wishes. It is therefore necessary to examine the objections to paternalistic intervention with a view to providing a list of conditions that should be met in designing or determining government intervention into matters of individual lifestyle.

Although health is unquestionably a good, the attainment or preservation of that good need not be the only or even the primary determinant of our actions on all occasions. Therefore, government sponsored paternalistic measures threaten to disrupt the balance of benefit among competing goods that an individual has arrived at after deliberation over his or her special circumstances and preferences.

The second principled objection to paternalism leans on the widely held idea of individual rights. Surely, it may be said, if a person has rights over anything he or she has rights over his or her own body. To make persons act for their own good, against their own judgement, appears to violate the integrity of the person (Weale, 1983).

There are reasons to fear being tyranized by the imperatives of health and health-producing lifestyles. Much of the advocacy for punitive taxes or exclusion from benefits under Medicare rests on unexamined premises that there is a "normal" health-producing behaviour or lifestyle. How certain are we that this view is correct? Alcohol is widely implicated as a major health hazard but taken in moderation is it really a health hazard? What should we make of the "elegant negative relationship between the consumption of wine and the incidence of ischemic heart disease" (Leger et al, in Childress 88-89). Let us suppose that the moderate consumption of alcohol is beneficial, should we therefore impose a tax on the teetotalers (or less practically, subsidize the consumers of alcohol)? What indeed are our obligations to become or stay healthy? It can hardly be argued that we have a right to impose or otherwise compel such obligations merely because society has a program such as Medicare.

Beyond the practical and ethical objections discussed hitherto is an important economic reservation about the wisdom of such financial penalties of lifestyle choices. Are such economic disincentives (for eg. taxes on tobacco) efficient? Do they, in other words, bring about the desired results and ultimately reduce the financial externality such lifestyles are supposed to cause?

An interesting study of this issue, undertaken by Barer et al (1984) summarizes the requirements for the imposition of such penalties of society's objective is to promote efficiency in the sense defined above. These requirements are (Barer, et al., 1984, 221):

(i) "that lifestyles are the result of rational, fully-informed choices by individuals in response to relative costs in the context of independent utility maximization;

(ii) that those choices are price elastic and, therefore, would shift in response to a shift in relative costs and benefits;

(iii) that health status is causally linked to the lifestyle choices in question;

(iv) that health care needs are a direct and monotonic function of health status;

and (v) that aggregate health care costs follow directly from health care needs."

They argue that any unsupported, unrealistic or false assumption at any point in these five assumption will likely produce an inefficient outcome. Whether this is true for all kinds of lifestyle choice - Barer et al. (1984) concentrated on the consumption of tobacco - is not obvious. Nor is it clear to what degree must any one of the assumption be violated for any proposal of economic penalties to "collapse" on grounds of efficiency. However, the study does show that the case for the blanket imposition of such penalties is rather unfounded and unlikely to succeed.

There is another effect of considerable relevance in assessing the wisdom of ideas such as tobacco or alcohol taxes. The imposition of such taxes will undoubtedly be regressive, that is, will more adversely affect the disposable incomes of the poor than the non-poor. Mindful of the relationship between low income and ill-health can we be sure about the net effect of increased taxes on the health of the poor or even on the aggregate health care costs under Medicare?

Quite apart from the economic assumptions that have to be fulfilled for an efficient lifestyles intervention strategy, Childress (1981) has suggested some important conditions for such intervention to be ethically acceptable. It will be noted that these "ethical" conditions overlap considerably with "economic" assumptions cited earlier. Childress' conditions are:

1. To interfere with an individual's liberty, we normally require that restrictions of liberty be based, at least in part, on the threat of harm to others or to society (e.g. compulsory vaccinations). Another goal might be to protect the financial resources of the community. This is a much more important issue in Canada because of Medicare.

2. To override the presumption against interfering with liberty, we need strong evidence that the behaviour or lifestyle in question really contributes to ill health. The health hazard should be identified beyond a reasonable doubt. The hazard should be identified by experimental or quasi-experimental means.
3. Another condition for overriding the presumption against interfering with liberty is that the interference be the last resort. Other measures short of interference, such as changing the environment, should be pursued and sometimes continued even when they are less effective and more costly than measures that restrict liberty. There is a conflict between the goal of improving health status (paternalism) and an individual's goal to make his or her life what he or she would like. Therefore, before interfering with an individual's lifestyle (liberty) every other method other than interference must first be considered.
4. A fourth condition is a reasonable assurance that the restriction will have the desired results as well as a net balance of good over evil.
5. We should use the least coercive means to reduce risk taking. Different means are often available. For example, advice, education, information, incentives, manipulation, behavior modification, and coercion do not equally infringe on behavior. In certain cases it may be more appropriate to

> use education as a means of reducing risk taking, this would be seen as the least coercive method. In other cases it may be more appropriate to use incentives as a means of reducing risk-taking. In general, all of the above mentioned means of reducing risk-taking would be used. What would vary would be the proportion of each of the methods used to obtain the goal of reducing risk-taking.

Of the five conditions that Childress feels may allow government interference in matters of lifestyle, the third and the fifth are by far the most controversial and difficult for policy makers and individuals to agree upon.

With respect to the third condition it can be argued that in and of itself it gives no guidance as to the limit to the costs society should be willing to bear in its search for non-interfering or non-interventionist programs to preserve the health of certain groups. Surely, some strategies that attempts to avoid intervening in personal lifestyle choices of individuals may be so costly as to violate not just common sense but put at risk the economic welfare and health of many. The issue becomes particularly complex when what economists call external diseconomies or third-party effects are involved.

With regard to the fifth condition, "coercive" unfortunately does not have a precise and constant meaning. Not only will individuals have a different meaning and understanding of coersion but they may have changing tastes for coersion. Thus, in the recent past laws regulating the compulsory use of seatbelts did not meet much opposition by the public though only a decade ago they did. In other situations where the government may attempt the same type of strategy, the opposition may be much more fierce (e.g. not allowing smoking in certain public areas though this too is changing).

To conclude this section, it is obvious that there appears to be a conflict between improving health through lifestyle intervention and respecting the freedom of individuals to choose their own lifestyles. The propriety and legitimacy of the measures and programs used to implement the new perspective needs to be carefully assessed as they could include the provision of information, mandatory or voluntary health education, mass media campaigns, taxation, legal prohibition, and so on. The ethics of prevention and health promotion has not received much attention. The new perspective is susceptible to overzealous application by true believers on the one hand and prompt rejection by libertarians on the other. Such possibilities may well be more likely in the absence of government policy. On the other hand, there seems to be wide public support for policies concerning smoking which only a decade ago would have been considered too paternalistic or interventionist. This is attributable to a massive change in social attitude towards smoking. Many countries have prohibited smoking in an increasingly wide range of public places, significantly raised taxes on tobacco products, passed "clean indoor air acts", introduced mandatory health education program for school-age children, prohibited advertising by the tobacco industry and/or initiated publicly funded counter-advertising. It would appear that the line between objectionable and tolerable paternalism is far from fixed and is in fact alterable. However, as the discussion in the section indicated both the economic and ethical wisdom of imposition higher taxes on tobacco are questionable. If policies simply reflect popular will or pressure from well-organized lobby groups without due regard for and analysis of ethical and economic considerations, is it any wonder that the current emphasis on life-style intervention and modification programmes are regarded with dismay and suspicion by many.

The Elderly: Costs, Aged-Biased Allocation and Ethics

One of the more infamous example of the rationing - a term more emotive, crisis-laden and increasingly substituted for the term allocation - of health care resources is the implicit policy in the U.K. of not giving renal dialysis treatment to the elderly under the National Health Service. Patients over sixty-five years of age in the U.K. are five times less likely to receive renal dialysis treatment than in Europe (Parsons and Lock, 1980). The comparison with the U.S. would be much worse. The adverse publicity and critical commentary on this de facto, though not official, age-biased policy is specially noticed in the United States (Clark, 1985; Caplan 1981; Childress, 1984; Avorn, 1984; Schwartz and Aaron, 1984). Some of the attention paid to the issue may well be politically motivated for this troublesome rationing is after all occuring under a system of socialized medicine. The contrast and irony in this situation is worth nothing. The National Health Service, founded on an egalitarian ethic of distributive justice achieves notoriety for using age as a criterion for rationing. The United States, with its notorious failure to assure even a decent minimum of health care to all, has extended renal dialysis - and it alone - to almost anyone who needs it, at a cost of more than $2 billion annually.

It is not difficult to show that an increasing proportion of our health care resources are being devoted to the aged. This is true in all of the western industrialized countries. There is a growing literature referring to the "high cost of dying". There are numerous suggestion that health care costs may be contained by more selective and appropriate treatment (but not necessarily non-treatment) of the terminally ill or seriously ill patients, especially if they are aged. Correspondingly, there are fears that such expressions are becoming "a code word, a euphemism for introducing into medical decision-making in a more direct way an offensive quality of life standard" (Siegler, 1984, 26). There are numerous expressions like the following editorial of the AMA News cited by Siegler (1984, 26):

> The reality of escalating cost is inescapable; sooner or later the crunch will come. If and when it does, our society will have to look for relief to a particularly costly segment of the total medical bill and to an especially high utilization segment of our population. We tend to be sentimental about the oldsters in our society, and we seem to have emotional hang-ups about death and dying... When the crunch comes, and we turn to a consideration of rationing, the first item we will look at will be the high cost of dying.

There is thus a risk of scapegoating the aged. It is reflected also in frequent reference to the emergence of intergenerational conflict. We may yet face the dilemmas and the political tensions entailed in adjudicating the competing claims on social resources advanced by different age groups or their advocates. In the United States, 58 percent of federal government spending on personal health care was for the elderly, who constitute 11 percent of the population; and only 8 percent for those under 19 who constitute 31 percent of the U.S. population (Clark, 1985, 120). Such imbalances has provoked angry criticisms from many and not the least from pediatricians. "The structure of health care is upside down, with the emphasis on old age. We spend more health care dollars per person in the last week of life than in the previous 75 years, and with much less payoff" (Brody, 1980, B8). Indeed, what this pediatrician could have charged is that the systematic negative effect on the young of the existing allocation of resources is age-biased in a morally objectionable way. The charge of an age-biased, unethical, allocation of social resources is one that is open to any age cohort, not just the elderly.

Anyone who considers health care as economic investment will inescapably regard the elderly as yielding a poor return as compared to an equal investment of resources on children. There are many children's diseases that can and needs to be researched and treated. Preventive care is a much more meaningful idea for the young. There are vociferous complaints that the health needs of the young is being underfunded. The economic wisdom of shifting the relative distribution of health care resources from the aged to the young is, prima facie, convincing and to its advocates, unassailable.

In a recent conference on health care for the elderly, Carol Buck made several interesting observations that lends some support to those who may wish to argue for the re-allocation of health care resources away from the aged. Her remarks summarized as follows are noteworthy in assessing the debate about age-biased allocation of health care resources:

> "The most important requirements for a better life in old age is a better life in infancy, childhood, and adulthood. People are the product of not only their genetic and prenatal inheritance but also a variety of lifetime experiences. So, for example - as her own research suggests - childhood infections may affect an individual's health later in life. Similarly, dental

> decay can lead to nutritional problems in old age, and high levels of noise over time can cause hearing impairment. The implication is that preventive health care must begin early in life." (Economic Council of Canada, 1986, 6).

The dilemma generated by the concerns for the cost-effectiveness of medical treatment and the ethical concerns about the rights of patients, equal respect for all individuals, and the traditional obligations implied by the doctor-patient relationship, has received considerable attention in geriatric medicine. In the view of many "it is neither legally nor ethically permissable under our present scheme of things for physicians to withhold or withdraw minimally adequate services from an older patient solely on the basis of the physicians' cost determinations or exigencies. The physician's primary loyalty traditionally has been, and should continue to be, to the best interests of the particular person being served" (Kapp, 182).

Jonsen et al. (1982) assert that in the past, physician's made medical decision largely on the basis of two criteria - the medical indications (diagnosis, prognosis, treatment options, and clinical judgement) and the wishes and preferences of the patient or guardian. On special occasions and with much reluctance, physicians were forced by circumstances to consider other factors including quality of life, cost of care, scarce resources, research and training needs, and so on to reach a decision. There is, however, a growing concern that this is becoming more common. Thus Siegler (1984, 25) complains that "the standard decision criteria of medical indications and patient preferences are being replaced gradually by a new focus on matters such as quality of life and external factors", notably the exigencies of cost containment. The consequences of this "bureaucratic" model of the doctor-patient relationships he fears, will be immoral and unethical policies to "dump the poor", "blame the victim" and "kill the dying".

Biomedical ethicists have taken radically different positions on the issue of treating the elderly. For example, Ramsey (1976) would have all treatments that are "medically indicated" instituted even if it means overriding patient's autonomous decision to refuse treatment on the ground that no one has the absolute right to refuse treatment. By contrast Thomasma (1984, 526) suggests that "the physician is not obligated to aggressively treat the seriously ill and incompetent aged person if patients who are competent would normally judge the therapy superfluous and refuse it." Indeed, he suggests a more controversial guideline for physician's decision-making: "the physician is not obligated to continue treatment if it represents a "bottomless pit" with respect to cost and the health benefits received are not significant" (Thomasma, 1984, 526). Because physician's judgements are central to the decisions suggested above and acknowledging that there are legitimate legal and other difficulties in making quality of life decision (they are inherently subjective), he encourages formal training programs for young physicians perhaps conducted by the aged themselves. It might be noted here that the Law Reform Commission of Canada (1983) argued that all competent patients may refuse treatment even if such refusal would make death inevitable. It also implied that in the case of an incompetent patient, where "substituted judgement" is necessary, the decision that is desired is what other patients of approximately the same age and condition, but who were competent, would choose to have happen to them.

Medicare in Canada assures patients access to available medically necessary services. It does not specify, and arguably does not even hint that there is no obligation to provide health services that has no reasonable chance of (medically) benefitting patients. Should it have done so? The issue is part of a larger question of course: how can a society determine the content, scope and limits to an egalitarian right to health care? More particularly, in a world of scarce resources and in a health care system increasingly under pressure to contain costs and improve its cost-effectiveness, is it necessarily unfair to limit resources to any particular group that makes these social and economic objectives difficult to achieve?

There are very good reasons why purely economic considerations should not be decisive and perhaps not even dominant in making decisions about the allocation of resources to the elderly (Bayer et. al., 1983). There are indeed well-known reasons why cost-benefit analysis and even cost-effectiveness analysis is of limited usefulness in geriatric care (Avorn, 1984). Under cost-benefit analysis, concepts such as discounted future earnings of human capital, and willingness to pay or "revealed preference" are biased against the elderly. Their earnings, if any, are obviously lower than others in society and they may be less willing to pay to sustain life for a variety of reasons. Even under a cost-effectiveness analysis, which gets around the income-related biases of cost-benefit analysis against the elderly, there is a major problem when benefits are measured in terms of quality-adjusted life years.

It is thus commonly suggested that when it comes to the elderly society should be guided by humanitarian principles and not merely by cost considerations. Of course, those who recommend this course of action do not mean that this should be done only for the elderly. There is no reason why society should not act humanitarianly to other underpriveleged, disabled and otherwise disadvantaged groups in society. A society that has Medicare and a not disrespectful range of "welfare state" social policies can be said to be governed by humanitarian ideals and not only by economic considerations. Whether our humanitarianism goes far enough is, of course, a matter of personal preference and opinion. The point is, however, that even a society that hopes to fulfill its humanitarian-inspired objectives which involve a number of select population groups with a great diversity of needs, cannot totally ignore cost-effectiveness considerations in the allocation of public resources. Speaking metaphorically, society's "humanitarian budgets" are not unlimited, and if some "budgets" are squandered they risk being reduced for failing to meet society's well-meant and well-inspired expectations. We should guard against simplistically equating spending more money or refusing to reallocate resources with praiseworthy humanitarianism. As will be suggested later we could spend less on the elderly on certain health care services and more on other needs of the elderly (including other less costly health care services) and probably improve the "quality of life" of the elderly as judged by themselves. What is essentially entailed in this admittedly sweeping proposition is a more fruitful allocation of resources to satisfy a wider range of needs of the elderly. Interestingly and paradoxically, the reallocation, at least some of it, is aided by evaluation techniques such as cost-effectiveness analysis. These economic tools are obviously suspect when they are used to select the objectives or ends of our allocation decisions. However, they are and can be of some assistance, though by no means fully or in all instances, in choosing the means - the alternative choices over allocation of resources - given a pre-specified societal objective. There is, indeed, much confusion about means and ends, not only in ethics but in the use and purposes of economic analysis as well.

Is using age as a criterion in the allocation of health care resources inherently unjust? Formal justice requires that similar cases be treated in a similar way. But cases are rarely identical or often not similar enough and the question we cannot avoid for executing substantive justice is which similarities and which dissimilarities are morally relevant for the allocative decision that has to be made. The reason why racism and sexism should not be used as criteria for purposes of distributing health care services or (any other services) is that it is unfair and unjust to treat people differently because of differences for which they have no responsibility. Ageism, like racism, is offensive because it involves attitudes, beliefs and practices that unjustly discriminates against a class or group of people. It is often used as a proxy expression for several presumed characteristics of the elderly that may be false for many specific elderly individuals. The aged are not a homogeneous group but on the contrary are quite heterogeneous: similar only in age but quite dissimilar in most other respects. It is a violation of the principle of respect for persons to ignore the characteristics of individuals who may not fit the stereotype and generalizations about their age cohort. Ageism is specially troublesome because the elderly are often subject to paternalistic intervention. No doubt much of the individual and communal paternalistic interventions are driven by ageism and are likely to involve disrespect for elderly persons and their autonomy. "It is morally imperative to attend to individual differences, rather than to treat the elderly, even the infirm or sick elderly, as a class. Paternalistic interventions cannot be justified in relation to such a class, only in relation to individuals" (Childress, 1984, 31).

There are clear parallels between ageism and sexism or racism. It is not difficult to illustrate cases in which appeals to age are morally objectionable in much the way that appeals to race or sex are morally wrong. There is little doubt that age, like sex and race, is morally irrelevant in a wide range of contexts. But this is not to argue that all appeals to age are morally wrong and in all instances of the distribution or allocation of social resources.

It a much noted, original and provocative analysis of age discrimination in health care resource allocation decisions, Daniels (1983) notes an importrant difference between age discrimination and race or sex. That is, with very rare exceptions we do not change our race or sex but all of us do become old. This seemingly trite observation leads, however, to an interesting and different theoretical perspective of the distribution of social resources. The basic problems is nicely illustrated by two hypothetical health care resource allocation options as follows:

> "Scheme A involves a direct appeal to an age criterion: No one over age 70 is eligible to receive any of several high-cost, life-extending technologies; e.g., dialysis, by-pass operations, or angioplasty. Because age rationing greatly reduces the utilization of each technology, resources are available for developing all of them. Scheme B rejects age rationing and allocates life-extending technology solely by medical need. As a result, it can either develop just one such technology, say dialysis, making it available to anyone who needs it, or it can develop several and ration them by lottery. Given our earlier discussion, Scheme A seems age-biased in a way that B is not. The effect of B, however, is to reduce the likelihood of people under 65 reaching a normal life span, 70. Some would contend that Scheme B, though it does not refer to an explicit age criterion, has a systematic negative effect on younger age-groups and is in that sense age-biased in a morally objectionable way. Of course, the contention depends on showing that maximizing the likelihood of reaching the normal life span is morally preferable to merely extending life wherever we can, without any reference to age. Considered moral judgments differ on this and related issues (and in ways that may reflect our interests given our ages); moreover, strong considerations and arguments incline us in opposing directions. The problem is made to seem even more intractable because these moral disagreements are set in the context of a distributive framework that makes one group's gains look like another group's losses." (Daniels, 1983, 270).

The latter problem, Daniels suggests, arises because of our all too common synchronic perspective, or a time-slice or contemporaneous view, in which there is an apparent competition between age cohorts. We should, however, also be concerned with a diachronic perspective in which we are concerned with the allocation of health care resources to the same people through the various stages of their lives. "Rationing by age criteria looks like a case of crossing personal boundaries only if we take a "time slice" perspective. Once we take the perspective of institutions operating through time, the appearance of crossing boundaries between persons fades and we are concerned primarily with distribution through the stages of life. No comparable point is true for rationing by race or sex over time" (Daniels, 1983, 276).

The age criterion thus operates within a life and not only between lives. Instead of addressing the issue of competing claims for health care resources between age groups at a given point in time, the more meaningful question should be what an individual at the beginning of his or her life might rationally prefer by way of services for each stage in his or her life-cycle. That is, what commitment of resources would be appropriate for different periods of life? In a hypothetical social contract framework people might quite rationally choose to participate in a lifetime health care allocation scheme that would concentrate certain lifesaving or life-extending technologies and bio-medical research in their earlier years in order to increase their chances of reaching a normal lifespan and to maximize the full range of opportunities possible for them at different points in their lifespan. They may thus accept age as a criterion for the distribution of certain health care resources or technologies. This choice is consistent with the concept of "justice as fairness" (Rawls, 1971) and transforms an apparent intergenerational conflict into one of social cooperation and prudent management and allocation of scarce resources.

It is interesting and instructive to compare societies allocative choices in the fields of education and health. While there are many differences between them, there are substantial similarities as well. Both sets of services enhance the quality of life, and improve the quantity and quality of human potential - dare one say, capital - so that individuals may generally avail themselves of the opportunities to contribute to their own and society's welfare. While we provide educational opportunities to all age groups, much of our social resources are commited to the young to prepare them for the realization of their full potential as citizens of the community and as productive members of society. Education for the elderly (which, admittedly may be insufficient at present) is directed more toward quality of life enhancement and personal satisfaction. There is a broad consensus that this pattern of allocation of educational resources are more or less appropriate and fair.

It is quite frequently asserted that we have a special obligation to the elderly and that they have an unlimited right to social resources because of their collective contributions to society in the past. Such assertions are enshrined in legislation as well. For example, "the Congress hereby finds and declares that, in keeping with the traditional American concept of the inherent dignity of the individual in our democratic society, the older people of our Nation are entitled to ... retirement in health, honor, dignity - after years of contribution to the economy" (Older Americans Act of 1965, As Amended, 1979, 2). Similarly, with reference to the allocation of health care resources, Jonsen (1976, 102) argued that

> "The elderly themselves, as members of society, even though not necessarily as individuals, have participated in the creation of ... social goods. The state of science, technology, medicine, and culture are effects of the elderly having lived communely (sic) through their histories. Effective recognition of their autonomy requires the application of that science, technology, medicine, and culture to their plight. This is due them in justice."

This is a curious and largely unnecessary defence for supporting an entitlement to care by the elderly. This view gives little guidance in answering the questions: entitlement to what and how much? Nor can such an argument ever be interpreted to argue for the discrimination against the young. After all, if productivity is what is valued, then we may wish to favour the young because we wish them to become productive members of society. Why is their future productivity not as worthy of support as the older generations past productivity and contributions? More importantly, from the standpoint of biomedical ethics, are two interrelated observations that should be made with regard to the position displayed in "Older Americans Act" and the view typified by Jonsen (1976). The first is that the "dignity of the individual" is not dependent on their "contribution to the economy". Secondly, the very ethic embodied in programs such as Medicare assures free access to medically necessary services independent of economic status or one's participation in the creation of social goods, past, present or future. In short, in a egalitarian framework, past contributions of the elderly or present or future contributions of the young, are quite irrelevent, at least as far as one's rights to the available health care resources are concerned.

Social intervention and advocacy on behalf of the elderly is now a well-established and common phenomenon in every economically advanced country. The advocacy, however, is not always well-grounded either with reference to a consciously adopted social ethic or in the analytical or empirical understanding of the changing socio-economic situation of the elderly themselves. It is little wonder then there are murmuring of discontent with the "graying" of the federal and provincial budgets. There are serious questions at stake with the current patterns of the distribution social resources especially in view of the stubbornly high levels of poverty and unemployment.

In the United States, Medicare provides health insurance coverage for the elderly. It is thus a categorical program rather than a universal one such as Medicare in Canada. Quite apart from the costliness of the program, Medicare in the U.S.A. is morally and politically vulnerable (Bayer and Callahan, 1985). "In a context of rising costs and scarce resources, and in any case, of tightened public budgets, we are more willing to impose stricter eligibility requirements and lower budget costings on Medicaid - most of whose recipients are young women and children - than to alter our practices for the dying elderly. Such rationing, ... is age-biased against the young" (Daniels, 1983, 267). Our social policies appear to pay insufficient attention to the fact that age is perhaps no longer a suitable proxy to need. In the U.S.A. and Canada, there is a noticeable decrease in the poverty rate and deprivation among the elderly and is presently below the level that prevails in the general population. While this is not unfair or undesirable, it does call attention to the dramatic improvement in their situation and raises the question of whether society has done enough for other socio-economic groups. With respect to health care in the United States, how indeed do we justify the millions of nonelderly poor who are provided with little or no protection against sickness? Questions of distributive justice cannot be adequately assessed by focussing on the needs of just one specific group, be they the elderly, the poor, women or whatever. Indeed it is the need to take as wide a view as possible that makes questions of the allocation of resources with reference to distributive justice particularly controversial and intractable.

Daniels argues that prudent citizens will agree to allocate some health care resource differentially over a lifespan, and that the way resources are allocated "respects the importance of age-linked opportunity ranges" (Daniels, 1983, 284). One implication of this view is that the content of what the elderly themselves may desire at their stage in life may well be different from what they may have wished in earlier stages (or worse, what others paternalisticly wish them to have). This is an important matter and deserves particular attention because it undercuts some of the fears people may harbour that Daniels' view may result in a net reduction in the welfare of the elderly. In fact, what is intended is the opposite.

A common criticism of the Canadian health care system is that it encourages premature and over-institutionalization of the elderly. Whereas 5 percent of residents over the age of 65 are institutionalized in the U.K., in Canada the rate is 9.5 percent. Two questions can be raised with regard to this phenomenon,. First, is institutionalization more or less cost-effective compared with viable alternatives, such as home care and social support services? There is evidence that non-institutional settings may be more cost effective for a sizeable proportion of those who are now institutionalized. Secondly, and more importantly, the opportunity range and the exercise of their self-respect, liberty and autonomy will be enhanced if they are helped to function as normally as possible outside institutions. A more constructive response to the needs of the elderly, specially one which gives credence to their own preferences and wishes is needed. This includes improved access to primary care services, a better integration of health and social services, strengthening of self-care initiatives and a more suitable long term care arrangements than is now the case. The latter should include more hospices and palliative care programs. The costly application of high-technology hereoic medicine is not necessarily what they need nor perhaps want.

To put it succintly, we have medicalized old age to too great a degree, reaping criticisms of both inappropriate care, and the excessive cost burden that ironically underlies the anguished debate about age-biased allocation of health care resources. The over-reliance on a medical and institutional care model is of course a common observation. What is not appreciated is that we cannot properly address the "true burden" of an aging population in a health care system that is woefully inefficient.

This is to suggest that the crisis mentality that appears to pervade discussions about the health and social needs of the elderly is exaggerated and at least not properly or fully attributable to the growing numbers of the aged. There are numerous ideas about how we may recover and reallocate existing resources from the health care delivery system to care for the aged in the future. In short, improving the appropriateness and efficiency of the existing delivery systems is one approach to resolving the dilemma we have been addressing in this section.

Among the ideas that should be seriously considered in our attempts to reduce health care costs is the need to coordinate long term care with acute care; the integration of the informal support network with the organized health care system; the substitution of nurse practitioners and other non-physician personnel for physicians; the evaluation of medical technology at least in terms of efficacy if not cost-effectiveness before its adoption and diffusion in the health care delivery system; improving community-based health and social services; provision of financial incentives and support services to families who look after their relatives; reducing preventable disease and disabilities of the aged; discouraging costly practice-styles of physicians, especially those who are prone to hospitalize their patients; more effective hospital discharge planning and post-discharge case management; and the reform and co-ordination of social and housing services with health services.

It is also important to note that the impact of aging on health care costs will occur slowly over the next 50 years and that demographically generated costs (as distinct from those resulting from a change in medical technology, for instance) can be readily met by real economic growth of 2 percent (Economic Council of Canada, 1986, 5).

Beyond these economic and health care organization reform, we may also need a change in values, at least those held by some segments of the population and the professions. Most notable among these is the need to place greater emphasis on restoring health and alleviating pain and suffering rather than maintaining life at all costs and the recognition by the professions of the non-clinical and non-physical needs of the elderly. Respect for the autonomy of patients and the institutional mechanisms to give full play to their right to refuse medical care through a "do-not-ressuscitate" policy in hospitals or the concept of "living will" is also warranted. While there are troublesome issues with regard to both these ideas that need careful analysis and response, including legal and professional acceptance, the experience to date should offer further guidance to their refinement and proper application.

It is worth noting at this point that surveys of physicians in several countries indicate that they are more willing to omit life-prolonging procedures in managing terminally ill elderly patients. This view is also supported by an increasing proportion of the general public. A Canadian study on the potential interest in active euthanasia among the sick elderly concluded that "an appreciable proportion of the hopelessly ill people would actually avail themselves of some form of active euthanasia if the means to do so were openly and legally available" (Kraus et. al., 1977, 127). The study also found that similar views were held by the elderly who were not ill.

To summarize, the dilemmas presented by the growing numbers of the elderly should not be exaggerated. There is much that society can and should do to mitigate the cost pressures that engenders the sense of crisis. There are also sound ethical reasons why some age-biased allocation may be widely accepted. A fuller play to the autonomy of patients is both ethically and economically beneficial, though it is for the ethical reasons why such autonomy-related institutions and ideas should be fostered and developed.

The Commodification of Organs: Risky Economics, Poorer Ethics

Organ transplantation is widely acknowledged as offering hope - often the only hope - for thousands of desperately ill patients. Advances in transplantation techniques, immunosuppressive drugs and tissue-matching capabilities have brought about noticeable and sometimes major improvements in patient survival rates (Massachusetts Task Force on organ transplantation, 1985). Earlier arguments that organ transplantation procedures were not cost effective have been increasingly questioned and in some instances, refuted (Evans, 1986; Evans, 1985). Thus, for many, especially the medical profession, the main obstacles to transforming the promise and the potential of this life-saving technology into a widespread therapeutic reality is the acute and persistent shortage of human organs.

Not surprisingly, there has been much debate and discussion as to the appropriate ways of increasing the supply of organs. In Canada, a number of federal and provincial task forces and commissions of inquiry have been established to examine the many complex issues that arise in the context of procuring organs. It is fair to say that most of the inquiries and task forces to date have paid little attention to or have summarily dismissed the idea of the commercialization of organs as an approach to reducing the existing and expected shortage. The notion of the commercialization of organs is obviously controversial. In Canada as in many jurisdictions, it is illegal.

To a vast majority of the public and the health care professions, the buying and selling of human organs is simply unthinkable, unethical and illegal. Nevertheless, there are suggestions that one or another form of commercialization of organs may be a practical and perhaps even a necessary solution to the problem or organ shortage. The commercialization of organs is not simply an academic question as there are numerous instances in many countries in which organs, especially kidneys, have been marketed. Everett Koop's (1984: 1591) claim that "we needn't fear that one poorly thought out solution -- a recommendation for the sale of organs -- will take hold" merely avoids the idea of commercialization as if it were not a debatable question. This is also true of countless other debate closing assertions such as: "the sale of organs by donors living or dead is indefensible under any circumstances" (Porter, 1984: 37). While many may well be and remain dead-set against the commercialization of organs, the realities of organ shortages and the already existing forms of commercialization will compel us to address the issue in our efforts to increase the supply of organs.

There have been numerous advertisements to buy and sell organs which have appeared in virtually every western industrialized country, though they are much more common in third world countries. Three hundred Canadians responded to an offer of $5,000 for a kidney by a dialysis patient (Schafer, 1986, 11). Some of the plaintive and desperate requests by patients or parents of children with end-stage diseases evoke genuine sympathy, while the crass commercialization exhibited in others is disturbing if not horrifying.

In Canada, Aidan Vining, a professor in business administration, proposed a market system which, he claimed, "would be more efficient and humane than the present system". His proposed incentives would take the form of a direct cash payment or tax credit. He also suggested "that young people might be willing to part with their organs after death if they receive a university tuition fee credit" (Globe and Mail, 1984, September 1,3).

The extent of commercialization in transplantation was worrisome enough for the Council of the Transplantation Society to establish guidelines for cadaver organ distribution and the donation of kidneys by unrelated living donors. Its "special resolution" declared that "no transplant surgeon/team shall be involved directly or indirectly in the buying or selling of organs/tissues or in any transplant activity aimed at commercial gain to himself/herself or an associated hospital or institute. Violations of these guidelines by any member of the Transplantation Society may be cause for expulsion from the Society" (The Council of the Transplantation Society, 1986: 3).

Assuming, however, that private free enterprise markets were feasible, their distributive implications, at least from the demand side is clear: organs will go to those with the ability to pay. With regard to the supply side of the private market there is widespread belief that the poor will be the principal suppliers of organs. The allocation of organs on the basis of ability to pay obviously violates the egalitarian ethic of distributive justice embodied in Medicare in Canada. In essence, such a market for organs effectively de-insures a select category of catastrophic diseases from coverage under what is supposed to be comprehensive health insurance schemes. Ironically, Medicare in

Canada is eminently more justifiable in protecting the public against the financial risk of catastrophic illness such as those requiring organ transplantation.

A private market is, without doubt, unacceptable in most western industrialized countries. It is interesting that the revulsion and vehemence against commercialization seem largely to be focussed on the selling of organs when from the point of view of public policy and ethics, the more obviously troubling feature of private markets for organs is that we simply do not believe that whether or not and when the seriously ill receive the required therapy should depend on their economic means. Furthermore, if life-saving organs are distributed on the basis of ability to pay and thus favouring the wealthy, it will seriously jeopardize any prospect of increasing the volume of voluntary donations.

However, there are other institutional forms of commercialization. The most important feature that these alternate forms would have in common is that patients would not have to buy the desired organs. Thus the distribution of organs will not be based on ability-to-pay but essentially on "medical need" criteria. The sole buyer of organs may thus be the federal and provincial governments. Commercialization is thus reduced to basically the willingness of the public to supply organs in response to a direct cash price, or surrogate prices (for example, tax incentives, free tuition, etc.) or payment-in-kind (for example, the (live) donor or his/her family members placed on a priority list for organ transplantation after all medically relevant criteria are satisfied). The literature on the commercialization of organs offers a number of suggestions and no doubt other interesting options can be devised.

Alternatively, a payment may be made to simply cover the various costs such as foregone earnings, medical expenditure and transportation costs, that donors or their family might incur in donating organs. Whether an essentially cost-reimbursement approach to paying donors should still be referred to as "commercialization" is an interesting question. Since there is no net monetary gain - dare one say, profit - to the donor or his/her family, it could reasonably be argued that it is unnecessary and inappropriate to label such reimbursements as forms of commercialization. Opponents may counterargue that even a cost-reimbursement scheme is objectionable if it induces persons to donate organs who otherwise would not have done so. To such purists any (financial) inducement sullies what should be truly a charitable act. This is obviously an argument over definition involving people's subjective judgements and perceptions of what is or is not an act of charity or giving.

It is fair to say that most of those who have expressed their antipathy to the commercialization of organs are not likely to favour any of the monetary or in-kind incentives to induce a greater supply of organs. Such supply-side commercialization may be less objectionable than the private market model but nonetheless unacceptable.

Indeed, for some, any financial inducement to increase the supply of organs constitutes a "commodification" of something that is essential to saving lives, and as such intrinsically objectionable. This position is nothing more than an emotionally charged assertion and not a reasoned argument. We have commodified many goods and services (for example, the services of transplantation surgeons) essential to saving lives. A more reasonable and at least debatable position is to argue that the demand supply and the distribution of organs should be placed beyond the marketplace because the consequences of doing so are preferable to the consequences resulting from one or another form of commercialization.

There are, however, reasoned objections to such supply-side commercialization of organs. It is invariably argued that whether the buying is organized privately or publicly it is the poor who are most likely to sell their organs. It is worth noting that the poor in North America are under-represented in the donating of organ at present (Prottas, 1983A). However, it is plausible to argue that the poor in many industrialized countries will respond to financial incentives in much the same way as the poor in Third World countries. The extent of the response can only be a matter of speculation. However, a much more certain result is that it is the poor in the Third World who will become an increasingly important source of organs.

It is surprising to see how frequently the expectation that the poor will become much greater suppliers of organs is, by itself, cited as an "unethical" outcome of the commercialization of organs. Very little argument is offered as to precisely what aspect of this overall consequence is unethical. Why does the distribution of sellers in terms of socio-economic class matter? What is particularly significant about the expectation that the Third World may become the dominant source of organs?

The advocates of the commercialization of organs, especially in the case of kidneys, argue that there is very little risk of ill health to the donor and that objections to its commercialization on this basis is without foundation and exaggerated. Additionally, most people, especially the poor, assume or are compelled to assume far greater risks to their health by their choice of occupations or lack of choice with respect to their living conditions, poverty and unemployment. The risk of death due to nephrectomy is less than 0.05 and major post-operative complications are few and minor complications disappear in a few days. The risk of a failure of the remaining kidney is less than 0.07 percent (Hartman, 1979: 159). It is therefore somewhat paternalistic to disallow the poor to assume the risks of selling their kidneys. Physicians can hardly object to performing the required nephrectomy by citing the primum non nocere ethic, since the risks to their patients is probably lower than that present in numerous other medical procedures and services dispensed by the medical profession. The advocates of commercialization are right when they argue that from a medical standpoint the removal of a kidney is a very low-risk procedure and that many (but by no means not all) donors may truly assume such risk voluntarily. However, the potential of risks to the health of donors is not the sole criterion or basis for public policy on organ donation or sale. After all, altruism in the procurement of whole blood prevails where the risks of ill health are even lower than for nephrectomy.

While the overall risks to the donor's health may not seem high, it is important to keep in mind two further observations. The first is that the risks may be higher for the poor as compared to the non-poor for reasons of access to medical care, differences in health status, living conditions and so on. Secondly, the risks to health are no doubt much higher for the poor in the Third World. There are many accounts of no or little post-operative care for kidney donors in the Third World. There is a legitimate need to fear the replication of unscrupulous exploitation that is found in the commercial blood market in India, Haïti and Brazil for example (Hagen, 1982). While strict regulations could be devised to monitor and control the international procurement and trade in organs (presumably we would not prohibit "foreign" organs nor practice a buy-local-organs-only policy) it is unlikely that domestic and international sanctions would prevent insidious practices already emerging in the Third World. An editorial in the Lancet (1984, November 10: 1081) warned that "[commercialization] lowers scientific standards ... and increases the danger of unethical behaviour in various sectors of medical science and practice".

There are other effects of the greater selling of organs by the poor that are clearly of considerable ethical importance. It can reasonably be assumed that informed consent and donors' autonomy are more likely to be violated under a commercial market for organs. Since a donation is rarely undertaken primarily to benefit the donor extra care must be taken to obtain truly informed and voluntary consent. Procedural safeguards such as affording privacy to potential donors, a cooling-off period, time to consult relatives, religious advisor and their own physician, and information and arrangements about post-donation care, will no doubt mitigate the extent of coercion that might otherwise prevail. However, one is not sanguine about the prospects given the potential for coercion by family members, procurement agencies and even health care professionals in the Third World.

The fear that financial or other incentives to induce a greater supply of organs might reduce voluntary organ donation is expressed quite frequently, though this is not an empirically derived supposition from actual commercialization of organs or surveys of public opinion. While acknowledging that this fear is speculative, Prottas (1983B: 28) counters that "it is informed speculation by people who deal regularly with the families of donors". Commercialization, it is argued, is destructive of the centrality of altruism in organ donation. Following Titmuss (1970), it is argued that there are moral and social advantages in organ donation as there are in the context of blood donation. The right to act altruistically is an important social right, one which is morally and psychologically beneficial and which enhances our sense of community that flows from the "gift relationship". While people are still free to make "gifts" of their organs (they would not be compelled to accept the financial or in-kind rewards) commercialization of the gift relationship represses the expression of altruism and erodes the sense of community.

In a much noted and discussed study, Titmuss (1970) compared and analyzed the performance of voluntary and commercial systems of procuring blood and blood products. He noted that several countries experienced a decrease in voluntary donation after a commercial system was introduced and the reduction may sometimes not even be counterbalanced by the amount of blood or its derivative products purchased in the commercial system. This gives credence to those who fear a similar reduction in the voluntary donation of organs or other body parts should commercial schemes for their procurement be implemented. The empirical evidence pose a challenge to economists who may legitimately ask "why should it be that the creation of a market for blood would decrease the altruism embodied in giving blood?" (Arrow, 1972, 351). Singer's (1976) response to this question may be paraphrased and modified somewhat for our purposes in the case of organs. The commercialization of organs, it can be argued, affects the meaning of the gift to the donor. When unpriced, it is often perceived to be a "priceless" gift essential to the saving of a life. With its commercialization it has a price, one which merely denotes how much a donor is saving the government should he decide to donate it rather than sell it. As such, the higher income groups are likely to "value" it even less than the poor. (As was mentioned earlier, it should be noted that it is the higher income groups who are the relatively more frequent donors of organs). Thus, the pricing of organs may be said to diminish the value and meaning of the voluntary donation of organs. In the parlance of economists, the commercialization of organs reduces the extent and quantum of "external economies" that is inherent in the gift relationship. Contrary to the claims of economists, the commodification of goods or services that were left beyond the marketplace does not always bring about allocative efficiency.

Whether the commercialization of organs will actually replicate what was experienced in the blood market is, of course, a matter of conjecture. What the blood example does show, however, is that people can be highly motivated with a sense of social responsibility towards the urgent health care needs of their community in a voluntary system, and that promoting the selling of blood significantly reduced this sense of generosity and concern. It is a conclusion that cannot be ignored or dismissed lightly in the debate about the commercialization of organs.

The selling of organs has occasionally been justified as a right to dispose of one's private property. Furthermore, "if there is a relation between a person and his body which legitimizes a gift of a body part, then the same relation may also legitimize the sale of a body part" (Mavrodes, 1980: 139). The rights and privileges emanating from the ownership of property are not absolute or unfettered. The limits society may or may not impose on property rights has always been a controversial matter involving complex questions of law, economics and ethics. Some have likened the freedom to sell organs as slavery in bits and pieces. Suffice to say the so-called "rights" of property are increasingly recognized as legitimate concerns of public policy. Society collectively can and does pass statutes and regulations governing if, when and how property may or may not be disposed of. The obligations on families in the disposition of corpses is one illustration of this, and city ordinances governing the disposition of garbage is another.

The private property justification for selling organs also raises a number of questions pertinent to the procurement of cadaveric organs. Who, if anyone, does a neo-mort belong to? Are relatives free to sell their beloved one's organs even if the deceased professed a wish against such selling? Are they obligated to sell his organs if that is what he wished done even though they would rather donate the organs as gifts (or they prefer to do neither)?

Economic concerns about commercialization relate to the aggregate expenditure in procuring the desired organs and the distribution of the benefits and costs. There is at present no knowledge about what would have to be offered by our governments to elicit the desired supply response. Since these procurement costs would raise the costs of transplantation, questions about the cost-effectiveness of the transplant programs will have to be reassessed.

There are also a number of administrative, legal and tax problems that the selling of organs might encounter, including: "the decreased willingness of medical professionals to donate their time in a market-oriented organ procurement process" (Prottas, 1983B: 248). The issue of liability when organs are refused or found defective after transplantation; and, the tax treatment of the compensation to the donor.

A major ethical concern is the sale of organs of minors and incompetents such as the mentally retarded. The underlying issue in these cases is whether or not such persons can give informed consent to the sale or donation of an organ. It is important to note that coercion can occur whether or not there is any financial gain involved for the donor's family or guardian, though under a system which permits the selling of an organ, the extent of coercion will presumably be greater. Indeed, as was mentioned earlier, coercion will occur even among adults, especially among the poor. It is also doubtful whether the legal and other procedural safeguards and protection to assure a voluntary and informed consent will prevent all of the coerced donation or sales that ethicists and legal experts fear may occur (Sharpe, 1985; Starkman, 1985).

Another argument against permitting the sale of organs is the increased probability of procuring a qualitatively less dependable product. While it has been suggested that "careful physical examination of the donor prior to organ removal, and of the organ itself after removal but prior to transplant, could greatly minimize the risks to the donee" (Brams, 1977: 192), an increase in the percentage of inferior or diseased organs cannot be discounted, especially if there is an international trade in organs. This is, of course, a clinical issue and as yet there are no claims that sub-standard organs can be assayed and ejected from the organ distribution system. It is noteworthy that in the case of commercial procurement systems for blood there is a much higher incidence of hepatitis compared to the voluntary systems. The difference is accounted for by the financial incentives facing donors, many of whom are poor, to conceal or lie about their medical histories. Even if our laws were such as to offer some protection against substandard or otherwise defective organs, it would hardly confort Canadians who thus have recourse to sue the poor of the Third World.

The proponents of the commercialization of organs though few in number, include ethicists, medical practitioners, philosophers, economists, lawyers and indeed a variety of other professionals concerned with biomedical ethics, health law and health care delivery issues generally. It is interesting to note that the advocacy of some form of market solution to organ shortage is not presented, as some might expect, as a "necessary evil" but usually as an efficient, practical and ethically acceptable approach to resolving the scarcity of organs. There is also an unstated belief that the market approach will generate the desired volume of organs though there are no empirically based claims (through surveys of public opinion and preferences, for example) or other support for this expectation.

Virtually every proponent of the market approach points out that medicine is so suffused with commercialism that it is contradictory or inconsistent not to permit at least the selling if not the buying of organs. An advocate of permitting the sale of organs argued typically that "regardless of individual impetus (the sale of organs is) oriented toward very humane goals. We do not, after all, think the medical profession any less humanely oriented because there are physicians who receive a staggering income and continue their medical practice because of that income" (Perry, 1980: 67). The argument that, because we pay for the providers of professional services involved in organ transplantation, we should also pay the providers of the organs so central to life-saving therapy, is, simplistic and somewhat irrelevant. One practical and consequentialist answer to this apparent inconsistency is that not paying transplantation surgeons will most certainly lead to a reduction in the undertaking of the life-saving therapeutic intervention, whereas not paying the donor still generates many thousands of organs and it is far from certain that paying for organs will generate the desired increase in their supply. At a public policy level there is absolutely no public demand that we not pay physicians, though there are concerns about the level of fees and remuneration. Nor is there any noticeable preference on the part of the public to pay for organs, for therapeutic, teaching or research purposes.

Similarly, it is charged that many societies including Canada "actively condone" or "tacitly tolerate" the buying and selling of body parts for medical education and research purposes. That there may be instances of unethical and perhaps even illegal commerce in human body parts cannot be gainsaid. However, this can hardly constitute a sufficient argument for the commercialization of organs. Nor can it be said that societies tolerate or condone commerce that violates social norms and values. The public is often and usually is ignorant of such instances. As well, over the past two decades there are numerous examples of government, medical and educational authorities developing codes of conduct, guidelines, standards and monitoring procedures to prevent unwarranted and undesirable aspects of the procuring of human body parts for biomedical teaching and research purposes. It should also be noted that the reverse argument can also be made, that because we do not condone market principles from operating fully in some services or commodities, we may wish to "de-commercialize" certain markets. The growing and dominant position of altruism in the American blood market is an illustration of this very point. The direction of change in public policies in any case should be determined by comparing the consequences of the alternatives and by public preferences and cannot be inferred by pointing out selectively certain apparent or real contradictions and inconsistencies in policies or practices.

Kidney transplantation, and perhaps even other organ transplantation, may have advanced to the point where it may be more cost-effective than other forms of treatment of end-stage disease (Evans, 1986). On the basis of the expected savings in health care costs, a number of analysts have recommended that the sale of kidneys be permitted. Indeed, the cost-effectiveness of organ transplantation and the low risks to the donors' health from the nephrectomy procedure, led Hartman (1979: 174) "to conclude that the sale of human organs, especially the kidney, is not only permissable, better yet - it is desirable. There appears to be no better way of reversing the paucity of organ sources, while improving the quality of life for the recipient to the fullest".

It is not difficult to devise individual - or describe actual - cases of a commercial transaction in organs that raise no serious ethical objections. Consider a poor woman in Africa being presented with an opportunity to sell a kidney to a wealthy Canadian patient for a substantial price. Assume also that there is no "coercion" other than the economic gain that the donor is promised by the recipient. The renal-failure patient is restored to health and the woman now has some means to protect her family from deprivation. Both have obviously gained. Such cases are sometimes presented as the basis for supporting the sale of organs and in the case depicted above the individual buying of it as well.

The objection to such case-based justification for the commercialization of organs is that such transactions between individuals have important implications for society at the level of social or collective decision-making. We have decided through publicly funded universal or categorical health insurance schemes that the medically needy will have equal access to care independent of economic means. Thus, the wealthy renal-patient will have to join the queue, wait patiently and hope. The case depicted above also has broader social ramifications as any widespread commercialization of organs will inevitably entail. An editorial in the Lancet expressed the issue poignantly: "the fact that social policies may drive individuals, through the threat of starvation, to participate in such transactions hardly make them acceptable, and when givers and beneficiaries belong to geographically distant societies, widely disparate in wealth and development, the equation becomes still more distasteful. Such disparities either within or between societies carry duties and responsibilities towards the less privileged rather than the right to exploit them" (Lancet, November 10, 1984: 1081).

There are, of course, far worse ways of resolving the organ shortage than the commercialization approach. Cloning is one, ignoring for the moment that the ultimate realization of this process in the case of human beings is still speculative. While cloning has been supported as a form of genetic engineering by ethicists (Fletcher, 1977) and scientists, it has not been supported merely as a potential source of organs for transplantation purposes. Are clones to be scavenged or sacrificed for the benefit of persons in whose "image" they were "created"? What is the moral or legal standing of clones in our society? Do they not acquire personhood and thus all the rights and dignity that such status implies? Another is setting up a system analogous to "jury duty" whereby a duly registered individual randomly chosen by a computer is asked - or worse, compelled - to donate a clinically desired kidney.

While artificial parts are ethically acceptable, the technological and economic barriers to artificial organs practically rules out this avenue for alleviating the organ shortage. Animal sources of organs too are ethically controversial and their therapeutic value is, at present, minimal to non-existent. Presently, and for the foreseeable future, the only practical source of organs for purposes of transplantation are the neo-morts and the living.

In Canada (unlike many European) countries, the current system of organ procurement is based on voluntarism, technically referred to as the opted-in policy, and is derivative of a philosophy of liberal individualism (Hoffmaster, 1985). Many scholars have suggested that laws and the corresponding procurement practices and procedures be altered to provide for routine salvaging of cadaver organs unless there is an objection (Dukeminier, 1970). The proposed system variously called "contracting out", "opting out" or "presumed consent" has provoked an enormous amount of debate and controversy (Somerville, 1985; Caplan, 1981; Sadler and Sadler, 1973). The many complex ethical, medical, legal and procedural issues raised in comparing the merits and demerits of the two prototypical systems - both have several variations - cannot be even summarily presented here. Suffice to say that most scholars involved in the controversy, even those who present a reasoned and persuasive case for adopting a contracting out policy concede that they are "not sanguine about the adoption" (Hoffmaster, 1985: 30) of such a policy in Canada or in the United States. A recent survey found that less than 8 percent of those interviewed felt that "doctors should have the power to remove organs from people who died recently but have not signed an organ donor card without consulting the next-of-kin" (Caplan, 1984: 10).

There are many European countries with presumed consent legislation and they too have long waiting lists for organ transplantation even though "they seem to come closer to meeting their needs for transplant kidneys" (Stuart et al., 1981: 239). However, the experience of France which has a policy of presumed consent is most instructive. The kidney transplantation rate in France is only slightly higher than that for the

United States which has an opted-in policy of organ donation. There are four reasons why the expected higher rate of organ procurement did not materialize in France. First, the presumed consent policy led to a reduction in the numbers of live donors. Secondly, despite the presumed consent policy, doctors are not willing to remove organs from cadavers without the consent of family members. Thirdly, France lacks the cadres of trained personnel needed in procuring organs. In France, "there is a reluctance to devote scarce medical resources to organ procurement" (Caplan, 1984: 11). Fourthly, there is the problem of enlisting the active support of hospitals distant from or unfamiliar with the organ procurement centres.

The latter two sets of problems call for a concerted response requiring essentially a greater commitment of resources and organizational, logistical and administrative reforms. Such reforms have been reasonably well assessed and articulated in numerous studies in many countries including Canada. There is much to learn from examining the successes and failures of organ procurement systems operating in other countries (Land et al., 1985). An analysis of the U.S. system concluded, not surprisingly, that "the actual supply of kidneys is largely a function of the effectiveness of the organizational infrastructure designed to obtain it" (Prottas, 1983B: 247). An increase in organ procurement is also possible by improvements in the techniques of removing and preserving organs (Slapak, 1985). As well, there are numerous suggestions for improving the logistical systems to ensure that organs are not wasted by achieving quicker and better matching of organs and the end stage disease patients (Wing et al., 1983; Gaylin, 1984).

There are many who believe that an efficient organ procurement system will generate a sufficient supply to meet the current and expected need for organs and that, therefore, a market for organs is quite unnecessary. Others dispute this presumption believing that additional sources of supply may still be necessary. The argument seems to rest on widely different estimates and expectation of need. There are legitimate economic concerns that the quantum of need for organs is yet another "moving target" that can be readily used by well-meaning professions and laymen to move society to yet greater and costlier efforts to save or improve the quality of lives of the desperately ill.

Society has to resolve not only how it intends to reduce the shortage of organs but also by how much the shortages should be reduced. Concerns about the high cost of dying, the ever present reality of the scarcity of resources and the realization that there are many ways of improving and protecting quality-adjusted life years should compel us to beware of setting unrealistic targets for organ procurement. In the future, if the availability of organs is no longer the binding constraint on the volume of transplantations, then governments may have to restrict capacity in terms of human and physical resources required for the provision of organ transplantation. Permitting only certain centres to perform organ transplantations and controlling their budgets is perhaps the most straightforward approach to regulating such capacity.

For the present, however, there is no doubt that the existing legislative framework and procurement practices fails to generate an adequate volume of organs. In Canada and the U.S., the policy of "encouraged voluntarism" as Caplan (1984) more accurately describes it, is woefully ineffective. In the United States, it is estimated that it "yields no more than 15% to 20% of the available pool of donors of corneas, kidneys, and other life-saving and life-enhancing organs and tissues" (Caplan, 1986, 50). In Canada, the record is poorer. The reasons for the poor performance are many and common to most countries. Most people do not sign their donor cards and even fewer people carry such signed cards. Nor do they have other written directives pertinent to the donation of organs or human tissue. Some provinces still do not legislatively recognize brain death leading to confusion and uncertainty among the public and the professions as to when an organ donation is appropriate. There is an overwhelming consensus that the attitudes and practices of doctors and nurses, especially the former, are the most important impediments to increasing the supply of cadaver organs. It is often pointed out that there is a very high rate of acceptance of organ donation by relatives (Sells 1979, Stuart et al., 1981, Terasaki, 1983). It has often been observed that there are psychological benefits to the grieving family from the donation of organ or human tissue. The expression "death be not proud" takes on a new poignancy: that (another) life is the consequence of tragedy.

The present system of encouraged voluntarism through written directives is not only ineffective in producing sufficient organs but is also ethically problematic. Those who wished to donate but failed to carry the appropriate instruction at the time of death are likely to have their desires unfulfilled. Indeed, even if they possess such instruction at the time of death they may still have their wishes unfulfilled, because of the inaction of the attending health care professionals. Those who failed to have a written declaration but who (or whose family) have no objection to donation are often not given an opportunity to consent to donation again because of the action, or lack thereof, on the part of the health care professions or hospital personnel.

One solution that has been tried and proven to be ineffective is public education. As well, the media coverage of organ transplantation, especially the scarcity of organs, is so extensive and sensationalized that further money and effort will not significantly increase public awareness about organ donation.

One solution that has become increasingly popular is the adoption of the "required request" policy which mandates that hospitals be responsible for designating someone to inquire about organ or tissue donation at the time of the death of a patient. Such a request must be noted in writing on every death certificate and if a request was judged to be not in the best interest of the next of kin of the deceased the reason for this decision too should be recorded. Caplan (1986) suggests that one of the longer term effects of the policy of required request is that the public will come to regard such requests as a normal part of the process of death in a hospital setting. This will encourage the public to discuss their wishes with family members, legal guardians or friends in order to assure compliance with their wishes. Thus "the decisions that are made would therefore be more likely to reflect the values and choices of all parties involved rather than the desperate, pressured reactions of unprepared and grief-stricken family members" (Caplan, 1986, 54).

Another controversial issue that has a bearing on the efficient procurement of cadaver organs is the definition of death (Keyserlingk, 1985). In Canada, it is believed that were all of the provinces to accept the definition of death proposed by the Law Reform Commission of Canada (1981), as has Manitoba, it would permit a greater recovery of organs from brain-dead cadavers. Indeed, there is "general agreement that it was to a very large extent the need of transplant surgeons to obtain organs in good condition which stimulated the plethora of legal statutes for the determination of death" (Keyserlingk, 1985: 48).

Economic anthropologists assure us that in all societies the production and distribution of certain goods and services are purposely left beyond the marketplace (Firth, 1967). The disputes and controversies about the commercialization of organs is fundamentally about the proper role of market mechanisms both as guides to making correct policy decisions - the sufficiency of cost-effectiveness or similar analyses - or as means of implementing such decisions. In the context of organ transplantation, the neo-classical economists answer of using lump sum transfers of cash to compensate for inequalities in wealth and income distribution, is just silly and irrelevant.

Desperately ill patients are sensibly more interested in the transfer of a lump that beats or a kidney that functions. What they want is a gift to last.

Life and Death by Chance or Utilitarian Selection Criteria

Economic scarcity compels hospitals, physicians and the government to answer increasingly discomforting questions about who should receive the available resources when everyone's health care needs cannot be met. Morally the choice becomes truly awesome when a decision is fundamentally about whose life is to be saved when the number of patients with fatal or end-stage illness are, as is frequently the case, greater than the available life-saving technology or resources. In the sixties and early seventies the paradigmatic illustration of this dilemma was the allocation of kidney dialysis. Since then, many other technologies such as organ transplantation technology and intensive care units has made the dilemma more prevalent. Technologies that are now in their experimental stage (eg. the artificial heart) and others on the horizon are threatening to make this dilemma endemic to our health care delivery system. The sheer magnitude and scope of biomedical research is such that we can surely expect further new and expensive treatments that will be available only to a few. The problem of patient selection will have to be faced squarely and will be of popular concern to the lay public and not just ethicists, physicians, hospital administrators and government officials. One solution that we are not likely to replicate is the end-stage renal dialysis program of the United States. It has been suggested that "the social discomfort with the microallocation decisions (selection of patients) was one reason that federal legislation provided almost universal funding for kidney dialysis" (Childress, 1981, 90). Even if we are willing to commit huge sums of money, in many instances the dilemma will remain because the effective constraints to meeting the need is the very shortage of indispensable resources such as organs and human tissue.

Scarcity is, of course, hardly a new problem. At various times, every society had to confront the problem of patient selection because of critical shortages of vaccines, drugs, insulin, devices, blood, hospital beds, certain highly skilled human resources and so on. Nor are such scarcities a thing of the past. However, life-saving technologies are more common now than in the past. As well, the public is more aware of the promise of such technology thanks to their dramatic popularization in the media. Most importantly, it is a public that is entitled through Medicare to receive such life-saving therapy. Finally, patients are much more aware of their rights and willing to exercise these rights. For these reasons, the issue of patient selection cannot be decided by the powerful and dominant decision-makers in the major health care organizations. Wider public participation should be sought and encouraged. Ultimately patient selection is not a medical matter, but an ethical issue that requires democratic participation of the larger society.

Besides, physicians have little guidance for such patient selection in their codes of ethics. In the Hippocratic tradition, the principle of beneficience does not advise or direct physician on what to do when they cannot benefit all their patients who may have equal needs. The closest analogies may be found in legal decisions but they too are of limited usefulness. The legal cases illustrated by shipwrecks or similar catastrophes involve people who decide for themselves as well as others, and often involve active killing rather than merely letting some die. Nor do the legal cases point to the same selection procedure. A famous decision in the United States accepted lottery in a desperate lifeboat situation as the best procedure that would avoid arbitrariness and manifest respect for equal right to life when not all can be saved. An English case, however, rejected the idea of a lottery as "grotesque."

There is general agreement about the first phase of the patient selection process. Priority should be given to patients who will probably benefit from the life-saving therapy. It is patently irrational and irresponsible not to consider medical acceptability. Incidentally, for some life-saving therapy the old or the young for that matter, may be excluded from consideration for essentially clinical reasons. It should be noted that all that is suggested here is that physicians must decide for which patients the scarce therapy in question will be "efficacious". This is quite different from the issue of net economic benefit or cost-effectiveness of the therapy. There appears to be widespread belief that this phase of the patient selection process is fairly straightforward and quite uncontroversial. This may well be the case for some life-saving therapies or technology. One wonders, however, if this is so in all cases. In the case of renal dialysis various psychiatric factors, including "cooperativeness" was included in the criteria of medical acceptability, no doubt because dialysis is a demanding and onerous treatment for patients. A high incidence of depression and suicide among dialysis patients offer good justification for including such factors. Would "cooperativeness" be valid for other diseases and therapies too? Another possible problem with the medical suitability phase of the selection process arises from the way we define efficacy. For example, Rescher (1983) would include in its "biomedical" component of the patient selection process something he calls the "life-expectancy factor". "Even if the exotic life-saving therapy is successful in the patient's case he may, considering his age and/or other aspects of his general medical condition, look forward to only a very short probable future life. This is obviously another factor that must be taken into account" (Rescher, 1983, 578). Thus a case can be made that even in such basic decisions as to who should be included in or excluded from the pool of candidates from which the final selection is to be made, to the extent that the presumed technical and clinical decisions of physicians involve parameters such as age, the public should be involved in the decision or rule making process in a suitable manner. We should make sure that medical acceptability criteria do not implicitly incorporate judgements about social worth or value of the patients who wish to avail themselves of the life-saving technology.

It has been argued that the exigencies of medical research may provide a second "valid principle" for inclusion or exclusion of patients (Rescher, 1983). This is reasonable only if three conditions are met. The first is that the therapeutic intervention in question must be deemed wholly or substantially experimental in nature. Otherwise, physicians cannot offer medical research interests as an excuse to exclude unsuitable candidates. Secondly, the exclusion of patients by physicians from the trial or experiment must be executed in a non-discriminatory and fair manner. Thirdly and very importantly, patients must be given as thorough an explanation as practicable about the risks and benefits of the experimental therapy so that they may exercise their right to refuse to participate in the experimental therapy.

There are essentially three methods of selecting patients for scarce life-saving therapy when the pool of medically acceptable patients is too large relative to resources. The first may be described as "rule-utilitarianism", the second, "act-utilitarianism" and the third chance, in the form of a lottery or on the first-come-first-treated basis. These are discussed in turn.

The rule-utilitarian approach uses formal criteria such as age, sex, marital status, number of children in the family, and so on. They are not intended to be arbitrarily discriminatory against the old, the very young or single people. In other words they do have some justification and will usually be either (a) medical psychiatric (eg. children may have too great a problem adjusting to the therapy) or (b) social (eg. the married person has priority because she has four children). The criticism levied against such an approach is that arbitrariness cannot be avoided and unacceptable exclusion will inevitably be seen as discriminatory. Thus, Ramsey has charged that while such "rules would be universalizable de facto standards of selection - a significant improvement over much current practice, [they are] not yet a sufficient or sufficiently moral principle of selection" (Ramsey, 1983, 468).

The second approach which may properly be called act-utilitarianism, requires that each patient be assessed in terms of several criteria, with the intention to minimize suffering and maximize benefits. Rescher (1983) argues that beyond the biomedical criteria of medical acceptability and life-expectancy, three other factors must be considered in selecting patients for life-saving therapy. The first is the "family role factor". "The nature of his relationship to his wife, children, and parents, and the issue of their financial and psychological dependence upon him, are obviously matters that deserve to be given weight in the exotic lifesaving therapy selection process" (Rescher, 1983, 578). Secondly, the hospital or medical institution is clearly warranted in considering the likely pattern of future services that may be rendered by the patient. Rescher argues that "society 'invests' a scarce resource in one person as against another and is thus entitled to look to the probable prospective 'return' on its investment" (Rescher, 1983, 578). Thirdly, patients' past services and contributions should be counted on "grounds of equity" rather than "on grounds of utility". Rescher believes that past contributions can also be justified along utilitarian lines. "The reward of past services rendered spurs people on to greater future efforts and is thus socially advantageous in the long-run future" (Rescher, 1983, 579). The utilitarian approach thus seeks the greatest good, where good is measured in social and largely economic terms.

This utilitarian method is ethically suspect and objectionable in the view of others who prefer a third approach to the patient selection question, that based on chance. One of the best known exponent of this view, Ramsey, argues that we should seek a selection procedure that "exclude comparisons of the social worth of individuals or of their extrinsic worth to others" (Ramsey, 1983, 468). He asserts that we have no way of knowing how really and truly to estimate the value of people, to others or to themselves, even if utilitarian standards are articulated, defended and fairly applied. The basic problem is that in a pluralistic society there is bound to be different views about acceptable criteria of social worth. Also differences in judgement cannot be eliminated in the selection process. The use of attitude or opinion surveys to develop these social values proposed by some utilitarians (Shatin, 1966) is not sufficiently reliable for the awesome and morally important dilemma of choosing who will live and who will die. While it is true that people are unequal in all sorts of ways, these differences are not morally relevant in deciding who lives and who dies, except in rare and highly unusual circumstances. Another criticism that can be levelled against the utilitarian approach is that if society were to view the medical relationship as an instrument for realizing select societal values, it would diminish the "personal care" aspect of the doctor-patient relationship (Childress, 1981). Patients would lose their trust in their physicians if they come to believe that physicians' treatment choices are influenced by their socio-economic circumstances. Interestingly, the utilitarian strategy is rarely criticized in the literature for violating the egalitarian distributive justice ethic that is the basis of programs like Medicare in Canada.

Surely, the requirement that people have a right to health care services on "uniform term and conditions" speaks against the utilitarian approach to selecting who would have access to the life-saving therapy from an eligible pool of patients. In Canada, under Medicare, an alternative selection procedure will have to be sought.

Ramsey and many others prefer a lottery, queueing (that is, first come, first treated) or random selection of medically acceptable patients as the morally preferable solution to the problem of selecting who will be saved. Others find chance to be literally irresponsible, a rejection of the burden of making difficult choices. Fletcher suggests that "its refusal to be rational is a deliberate dehumanization, reducing us to the level of things and blind chance... [the development of the criteria for selection is] the number one task of medical ethics" (Childress, 1981, 93-94). Similarly Basson (1979) contends that chance has no place in scarce medical resource allocation except when the utilitarian approach fails to distinguish among the eligible candidates seeking the scarce therapy.

The major defence of chance methods of selection is that they realize certain basic principles and values of society better than utilitarian methods. Equality of opportunity, personal dignity and, above all, the equal right of every human being to live, can only be satisfied by random choice among equals. Ramsey offers a theological analogy for a selection procedure based on chance, by arguing that an extension of "God's indiscriminate care" into human affairs requires random selection. "The more nearly total is the estimate to be made of an individual, and the more nearly the consequences determines life and death, the more unfit the judgement becomes for human reckoning. The more nearly total is the estimate made of an individual, the nearer we would be to presuming to act as gods in the Day of Judgement" (Ramsey, 1983, 471). As mentioned earlier, chance approaches also maintains the trust between doctors and patients; patients are not subjected to comparative social worth assessments. People can also feel that they are not treated as means to some social end.

Rescher, like other utilitarians, is not opposed to random selection when there are too many candidates who are equal on the basis of the utilitarian scoring or assessment procedure. Curiously he justifies the selection by chance by offering three arguments that, one could reasonably argue, undercut the justification for his utilitarian schema outlined earlier. First, he admits that "any acceptable selection system is inherently non-optimal [and] admittedly imperfect" (Rescher, 1983, 582). Secondly, chance selection would no doubt make it easier for the rejected patients and his family and friends to accept the adverse result. Thirdly, "random selection does much to relieve the administrators of the selection system of the awesome burden of ultimate and absolute responsibility" (Rescher, 1983, 583). These three arguments together with those cited earlier (especially those respecting equal right to life and equal access under Medicare) make a persuasive case for random selection as the ethically most acceptable of the three approaches.

Ramsey suggests that the policy of "first come, first served" is in principle the same as a lottery. He declared that "first come, first served amounts to an on-going lottery" (Ramsey, 1983, 468). In practice, however, the two approaches can be quite different. For example, because of geography, and the (hospital) privileges, power, and influence some physicians have, not all desperately ill patients have the opportunity to join the queue let alone be at the head of it. The operation of a formal lottery is thus preferable to patients who have little access to the large urban teaching hospitals which have most of the life-saving technology that is being referred to in this discussion. A lottery fulfills better the principles of accessibility and portability of benefits under Medicare than does the policy of 'first come, first served'.

Those who support chance methods of selection are, however, willing to make exceptions to this approach, though they argue that such cases will indeed be rather rare. A pluralistic community may become "focused" as a result of a major disaster or crisis. What is meant by term "focused" is that the community will be forced by circumstances to focus almost exclusively on achieving a certain outcome, usually that of saving or protecting as many lives as possible, as in a lifeboat after a shipwreck and natural or man-made disasters. In a focused community it would be proper to allocate health care resource first to those who have very specific qualities or skills that are essential for the survival of that community. It should be noted that comparison between persons in a focused community is limited to indispensable skills required in that particular crisis. These qualities do not concern the person as a whole and it is thus very different from social worth comparisons made in an unfocused society. Ramsey offers several examples that illustrates this point: (a) penicillin was allocated to men "wounded in brothels" rather than wounded in battle on the grounds that the former could be more easily be made fit for battle and (b) priority given to crew members to handle a lifeboat after a shipwreck and (c) triage medicine in times of disaster, where health care professionals are treated first so that they can help others. Non-random selection is thus justified in a focused environment where some persons are genuinely indispensable for the performance of highly valued activities. Such focused situations are rare. In any case, they must be regarded as the tragic exceptions to a system of chance that best upholds the fundamental values and principles of society.

Before passing on to the next section a few comments about the relationship between economic evaluation techniques and the selection methods discussed here should be noted. Implicit in the utilitarian approach is the use, preferably, of cost-benefit analysis or as a second best, cost-effectiveness analysis. Chance methods of selection quite explicitly deny the validity of such analytical techniques in choosing patients for life-saving treatment. The clinical assessment of patients for inclusion into or exclusion from the eligible pool of candidate for treatment requires careful consideration as suggested earlier. What clinical outcome measure are the patients to be assessed against? The total number of quality-adjusted life years is in effect the more important half (effectiveness) of cost-effectiveness analysis. In any case the cost of treatment is more or less fixed, so that in effect we practically are back to cost-effectiveness analysis with its unavoidably subjective assessment of quality of life. It would be safer if the clinical standard was stipulated simply in terms of a fixed number of years, for example, whether or not the patient in question would survive for (say) 5 years were he or she to receive the life-saving therapy. In this way, all patient judged medically eligible for the therapy can be said to have an equal chance of obtaining an equal improvement in their health status. There is thus no basis for choosing between them except through chance.

Priorities in Bio-Medical Research: How, Why and For Whom?

In the bio-medical ethics and sometimes even in the economics literature, the allocation of resources and the determination of priorities for medical research is typically approached by addressing three sequential questions. The first question refers to the optimal aggregate quantum of resources that should be devoted to medical research, where optimality is determined in relation to the allocation of resources for other needs, wants and pursuits of society. The second question is basically concerned with the distribution of the aggregate amount of resources for medical research into more or less broad categories or components of research. Bioethicists refer to these two questions as "first-order determinations" or "macro-allocation decisions" (Childress, 1981; Freedman, 1982). The third question, often called "second-order determinations" or "microallocation decisions" thus involves the determination of the specific research projects, activities or groups that should be supported within the macro-allocation constraints and priorities established in response to the first two questions.

It is important to recognize that the macro-allocation question is not addressed by a single public decision-maker nor answered in a consciously collective sense. The statistics that depict the presumed macro-allocation decisions are really aggregations of a myriad of public and private decisions about medical research. Moreover, it is very difficult to establish precise definitions of medical research and correspondingly it is rather difficult to measure the total amounts allocated to this activity. What is clear is that the often used statistics on expenditures for medical research generally underestimates the real magnitude of research funding and activity in Canada. Thus, for instance, a portion of the price for prescription drugs and biomedical devices, equipment and machinery should properly be considered as research funding. As well, research outside the traditional and recognized medical research establishments, for example, in the areas of environmental research and control of toxic substances, often have significant direct or indirect effects on the health care system or the health of the population generally. The boundary between medical research and several health-related research has always been a fuzzy and tenuous one, making for rather severe definitional and measurement problems that unfortunately have been generally ignored in the medical research literature.

It is patently wrong to equate the determination of a variety of publicly funded budgets such as for the Medical Research Council, the National Health Research and Development Program, and their provincial analogues, even if they were to be taken collectively, as constituting the answer to the macro-allocation question. Governments also affect the overall level of resources devoted to medical research through non-budgetary means, the most notable of which are tax write-offs and various forms of public subsidies and patent protection granted to private firms and individuals. Other avenues for influencing the amount of research is through tariff and non-tariff barriers to imports and government purchasing programs to assure sales or a certain market size for the products of firms. Private decisions encompassing charitable donations for medical research by individuals, corporations and foundations and the for-profit commercial investments by proprietary bio-medical and pharmaceutical firms are essentially concerned with the micro-allocation question and have very tenuous, if any, relationship with the overall macro-allocation target.

The above arguments also suggest that there is no substantive reason to make the macro-allocation decision first. We do not have to decide to invest "X" billion dollars worth of resources for medical research first and then proceed to determine which specific research activities are worth funding. If the ordering of decisions, especially in the public sector, appear to follow the sequence implicit in the three questions we posed at the outset, it is largely related to matters of bureaucratic and procedural convenience and has little, if anything, to do with rational decision-making. Economic analysis, to the extent that it can guide allocative decisions, basically apply at the micro level.

Irrespective of which level of allocation decision should be addressed first, it is argued that the issue of the optimal allocation of resources for medical research cannot be rationally determined. One practical underlying reason for this conclusion resides in the markedly different notions of "health" itself to which medical research is presumably directed. The definition of health of the World Health Organization (WHO) as a "state of complete physical, mental and social well-being" has proved to be very controversial, derisively vilified by some or warmly embraced and strenuously defended by others (Fletcher, 1979). Pragmatists will no doubt interpret and tailor the concept to suit the particular analytical or policy issue they are grappling with. Critics such as Childress (1981) and Daniels (1981) argue that if health has ultimate value, rational trade-offs between health and other wants and preferences are precluded. If the concept of health is so all-encompassing that it is hardly distinguishable from an intangible and highly subjective concept of happiness, it becomes analytically problematic in determining public policies and in establishing priorities. WHO's conception of health "over-medicalizes social philosophy and social policy, reducing all social goods to health" (Gauthier, 1983, 180).

It is clear from the extant literature that the conceptual difficulties with very general and overweening definitions of health has forced many analysts to employ considerably narrower notions of health. Clearing the conceptual hurdle, however, does not resolve the three questions posed earlier. The adoption of varying definitions of health no doubt results in quite different valuation of health services and correspondingly would lead to different judgements about the overall quantity and distribution of the capital and human resources that should be allocated to medical research.

Just as economic analysis cannot yield deterministic answers to the macro-allocation question, so it is with ethical considerations. The admission that ethical considerations cannot determine the quantum of resources required for medical research is by no means the same as arguing that we have no moral obligations to undertake any medical research. It will be argued that the collective provision of resources for medical research may be construed to be a logical extension of any argument that supports egalitarian or utilitarian formulations of the principle of distributive justice. Theories of distributive justice are usually cast in terms of equal or equitable access to health care services made available through public policy. As was noted earlier, except for the libertarian entitlement theory most theories of distributive justice favour some institutional arrangement that allows for the public provision or funding of health care services, though there are notable disagreements between the various theories with respect to many specific features and designs of the public programs (Brody, 1981; Fried, 1976; Menzel, 1983; Outka, 1974; Gutman, 1983). These include but are not limited to: (a) how extensive and unconstrained are the implied positive rights of individuals (b) what is the appropriate range of health care services that should be provided by society (c) whether the principle of distributive justice would permit private market satisfaction of individual preferences and (d) how should society allocate scarce resources such as life-saving therapy, devices and human organs when the demand for treatment far exceeds the available resources.

Many bioethicists have not formally examined the implications of their ideas of distributive justice on the public responsibility for medical research per se. If, as argued by Amy Gutman (1983, 56) "equality of opportunity, equal efforts to relieve pain, and equal respect are the three central values providing the foundation of support for a principle of equal access to health care", then these same values lend prima facie support for the extension of the principle to include not only existing health care services but therapies, devices, procedures and services that could be made available through medical research. Why should a theory of distributive justice be applicable only over the presently available range of health care services? The existence of several diseases that presently cannot be cured, palliated or prevented compels a search for answers either of a curative or a preventive nature. But how much should be allocated for such purposes? It is difficult to see how ethical considerations alone can or could ever provide an answer to this question.

If we believe that society should collectively extend our positive rights to include medical research, what are the ethical criteria by which we should define our priorities and allocate scarce resources? In a majority of the theories of distributive justice the ethical criterion is formulated in terms of equal access or equitable access to "needed" services. While the precise meaning of these concepts vary from one analyst to another the common meaning is that our institutional structures and public policies should be such as to bring about health care benefits proportional to individuals' "need" for services. It is acknowledged that need is a very slippery concept and that in our legislation respecting Medicare in Canada, we have defined it technocratically and evasively as that which the professions consider "medically necessary". But what would we regard as "need" in the context of medical research? Should mortality rates serve as an indicator of the need for medical research so that we devote a higher proportion of our resources to heart disease and cancers than to other causes of mortality? Should need be interpreted as the "quality of life" so that it is pain, disability and suffering that is the relevant index for determining research priorities? In this instance, diseases such as arthritis and several mental illnesses would warrant a much higher priority than they do at present. Or should need be conceived as "equality of opportunity" to achieve a certain longevity as Daniels (1983) has suggested so that society is urged to allocate greater amounts for medical research targeted on the diseases of the young and middle-aged and less to the life-extending technologies being focussed on the elderly? Would we wish to give special weight to the needs of those who suffer fom the natural lottery of birth (congenital diseases and defects) or those who acquired diseases involuntarily (occupational diseases)? Would we apply what Childress (1981) called the "principle of compensatory justice" in providing and allocating greater amounts of resources to such population groups? If the raison d'être of Medicare is to permit equitable access to care proportional to the needs of the various socio-economic population groups in society, should not the analogous principle in the context of medical research be that the research priorities be so determined as to satisfy the "unmet medical needs" of the same socio-economic groups? These are interesting issues and each alternative approach would lead to quite different answers to the aforementioned sub-allocation and micro-allocation questions.

While ethicists have suggested one or another of the criterion suggested above, economists would find each one of them wanting of further reflection and consideration. There is no necessary connection between the size and nature of the health problem and the research such problem should command. It is not true that the larger or more common the problem the more meritorious it is for research. What is missing from these criteria is any consideration of the expected pay-offs in terms of the improvement in health resulting from the research efforts expended to solve the problems.

Yet another approach and argument for the public support of medical research is provided by Green (1981). His approach can also be construed as providing ethical principles that determine, at least broadly, the priorities for medical research. He notes that most ethical discussion of health care and justice focus on issues of distributive justice over present health care resources and especially the rights of less-advantaged individuals. Green eschews the "chronological parochialness in our thinking about health care as well as an insensitivity to the long term consequences of our policy choices" (1981, 193). He suggests that both utilitarianism and the Rawlsian contractarian approach to a theory of justice (Rawls, 1971) could compel us to adopt an intergenerational morality requiring the present generation to incorporate or "read into the moral equation" the welfare of future generations. He suggests a "very general principle to guide our intergenerational moral thinking. According to this principle we are required to strive to ensure that our descendants are left with the means to a progressively better quality of life than ourselves and, at a very minimum, are not rendered worse off by our actions" (Green, 1981, 198). As articulated, the principle obviously raises a number of questions since many of the concepts beg clarification and definition and are inherently subjective, value-laden and immeasurable. These questions, however, need not deter us in examining the implications for health policy of this principle of inter-generational justice. Green derives several major implications from the principle that are of material relevance to our concerns. The first is that the present generation should scrutinize all highly technological and costly medicine "for their sustainability into the future as well as their compatibility with other future commitments we would like to make toward health" (Green, 1981, 200). A paradigmatic example of this is the development and deployment of a totally implantable artificial heart heart (Springarn, 1976). It is important to note that inter-generational moral consideration do not automatically rule out expensive medical innovations or care but only requires that the cost and resource-using implications be thought of as an additional constraint in our contemporary decision-making. Secondly, we should be concerned to protect future generations from genetic disease, whether that be caused iatrogenically through medical practice (for example, the use of the drug DES to stabilize pregnancies which has serious consequences for female offsprings many years later) or through environmental exposure that causes dysgenic effects or congenital diseases. Thirdly, Green argued that environmental medicine and the various types of research needed to support it deserves a high priority not only because it makes sense in the present and immediate future but that an inter-generational view further enhances its priority. Fourthly, an inter-generational moral principle would make basic biomedical research essential to solve problems such as congenital disorders, genetic diseases and problems of aging and the replacing of costly halfway medical technologies such as kidney dialysis. Information, knowledge and scientific capital should be part of our legacy to the future not only to improve the health of future generation but to enable them to spend less than otherwise on health care itself. In other words, reducing the economic burden of future generations is one of our obligations under this formulation of intergenerational morality. Fifthly, Green argues that a future-oriented moral approach would support a Rawlsian maximin approach to questions of social distribution, that is, favouring the least well-off where health care is concerned where the least well-off are thought to be those most in need of health services and those who are economically disadvantaged. Presumably the focussing of health services to the poor is to break the inter-generational transmission of poverty since Green (1981, 207) says that "poverty and ill health exist in a tight interrelationship with poverty causing ill health and ill health helping to perpetuate poverty". Another reason for Green's emphasis on the maximin distribution is the need to control fertility. "One part of the solution to the intergenerationally disturbing problem of rapid population growth, therefore, lies in placing an emphasis on the provision of adequate personal medical care to lower income families ---

whether in a national perspective, or as part of our nation's foreign aid responsibility to underdeveloped countries" (Green, 1981, 204). This last point is likey to be controversial and subject to varying interpretations. The economic and social necessity of controlling population growth is generally quite well taken. However, the poor themselves are likely to regard maximin policies that ostensibly favours them only to control their fertility with grave suspicion. It raises the spectre of biomedical and social eugenics solutions to what are largely economic and social environmental problems. Besides, different ethnic groups, races and nation states are not likely to have the same sense of intergenerational morality and will, of course, have their own deeply felt ideas of whose and by how much future generations are deserving of present day sacrifices and costs. The application of such policies thus requires an inordinate degree of sensitivity and political consensus.

From the foregoing it would appear that while ethical reflections do support allocating resources for medical research, in and of themselves such arguments are not particularly instructive or helpful in determining the total resources that should be devoted to medical research in relation to other human wants. As well, while considerations of distributive justice could suggest research issues that warrant high priority or at the other extreme, deserve no public support whatsovever (for example, those experiments that the public judges to be highly offensive and an egregious assault on societal values) such considerations would at best provide only a very rough basis for the internal distribution or allocation of the aggregate amount of resources for medical research. Whether ethical considerations can absolutely foreclose certain research activities is a most interesting issue. Many scientists and researchers would argue against any censure of research endeavours on purely ethical grounds. On the other hand there is a growing literature that appears to demand that certain research activities be forebidden and at the very least not be supported by public funds (Anderson, 1982; National Council of the Churches of Christ, 1984).

It is often thought that economic approaches are both more "rational" and "objective" and in any case better able to answer the three questions we began with. This premise is, of course, far from universally accepted, even by economists. A full analysis of the issues cannot be entered into here. Suffice to say, critics of this viewpoint argue, quite correctly, that the presumed rationality of economic analysis can only be judged in relation to the behavioural assumptions and the narrowly prescribed objectives economists typically presuppose, the dominant ones being the efficient or cost-effective use of resources. Thus, disputes about the ends of public policy makes the policy prescriptions emanating from economic analysis, however elegant or rational, simply insufficient and sometimes even irrelevant. It is further argued that the techniques and methodologies of economics often do not or cannot perform the requisite analyses. Charges of insufficiency or incompleteness is invariably levied at a group of "third best" techniques variously called cost-benefit analysis or cost-effectiveness analysis, and a more recent arrival, risk-benefit analysis (Mooney, 1980; Gray, 1979; Baram, 1980). The claim of objectivity in economics is particularly troublesome. Critics argue that it means little more than the tendency in economic analyses to ignore distributional questions or worse, to camouflage them. The routine use of market or shadow prices and preferences assuming existing distribution of wealth and income is not likely to be readily accepted by those who are concerned with moral priorities in allocating scare resources, especially those relating to something so fundamental and emotive as health.

It will be argued that economic analysis is generally not likely to provide answers to our three questions, particularly the first one, that is, the macro-allocation question. However, economic considerations can point to certain priorities and may under some circumstances generate valuable information needed to choose between two or more research projects or activities that are targeted to the same objective (for example, treatment of a specific disease) or the same population group.

Even if medical research and its resulting technologies were to be evaluated retrospectively the required analysis is often very difficult to accomplish (Culyer et al., 1983; Banta et al., 1981). Evaluations become even more difficult if the objective of the exercise is to decide how to allocate scare resources for research. Any planning for medical research will be hopelessly bedeviled by serious uncertainties about the outcomes of the research and therefore its ultimate benefits to society.

It was suggested earlier that what bioethicists often call first-order determination need not be addressed first. Rational economic planning of resource allocation decisions regarding medical research would, it was suggested, begin with the micro-allocation or second-order determinations. The primary reason for this is that economic analysis and techniques such as cost-benefit analysis and its variants are really only applicable at specific and individual project or activity level. Ideally, the macro-allocation question of how much resources should be devoted to medical research is then determined by the relative ranking of the medical research projects and activities against all other projects and activities of government including other broad areas of policy such as defence, social services, education, housing, foreign aid and so on. Understood in this way, it is apparent that the two types of decisions are not analytically distinct. (In reality, of coure, the macro-allocation and some of the micro-allocation issues are decided on the basis of a complex set of budgetary considerations and political priorities and exigencies). Such an approach to allocating resources is of course impossible. Any serious attempt to do so would obviously be enormously wasteful of resources. It is only a relatively small proportion of research endeavours for which it is even feasible to undertake the required economic evaluations. These concerns together with the inherent difficulties and shortcomings of the techniques and methodologies of economics and strong differences of opinion about the very objectives and priorities of policy makes any hopes of rational economic approaches to these matters hopelessly unrealistic.

Notwithstanding these and other problems in economic analysis, economists have managed to arrive at conclusions and recommendations concerning resource allocation for medical research. The formal attempts to answer the questions we posed earlier are far from exemplary illustrations of rational economic planning. The analysis are characteristically eclectic and pragmatic with considerable use of proxies and approximations, gut reactions and guesswork. If required or needed to generate some specific answers, economists do provide allocation decisions, usually with a respectable and cautionary list of heroic assumptions, caveats, disclaimers and unanswered or unanswerable questions. Faute de mieux, that is all economists have to offer. The results at least provide a "starting point" for public discussion and while not developed by the standards of "rationality" we would like, at least have the aura of considered judgement and informed estimations.

Thus the Ontario Council of Health (1973) in a major report on the economics of health research recommended a significant increase in the funding of "health research", especially by the federal government, "so that expenditures on it from all sources are equivalent to approximately 4.5 per cent of total expenditure on health care" (Ontario Council of Health, 1973, 19). (It will be noted that reference is made to "health" and not "medical" research, the former being more comprehensive than the latter. We are, of course, interested in methodologies and criteria for making allocation decision and the distinction is not particularly problematic). In the words of the report the figure is largely derived and supported by the following argument.

"The target is based on the following considerations: the combination of the relative size of health research as compared to the total research effort of several countries and the goal of 3 per cent for expenditures out of GNP on research found in several well-developed countries. Since health research commonly accounts for up to 10 per cent of overall research expenditures but at the same time expenditures on health care amount to some 6 per cent of GNP, a target size of 4.5 per cent of total health expenditures devoted to health research is implied if a goal of 3 per cent of GNP is selected for expenditures on all research" (Ontario Council of Health, 1973, 20). Whatever this is, it is not rational economic analysis or planning and may more accurately be described as the "benchmarks and yardsticks" approach to resource allocation. Many obvious questions comes to mind in reaction to the basic argument of the report. What is the relevance of the observed standards? Why choose only the "several well-developed countries" to establish a yardstick? Why indeed assume a constancy between health research in relation to all research in Canada? Are the chosen benchmarks and yardsticks more logical or reasonable than others that could be considered? For example, public funding could be some multiple of the amount allocated by individuals and firms through charitable donations. Other yardsticks from epidemiology or vital statistics could also be constructed such as person years of life lost through premature mortality. But in the final analysis any yardstick is likely to prove insufficient for the purposes of allocating resources for medical research on a rational basis. The key question in rationally planning for medical research is: "What probability is there that a particular research effort will actually contribute the solution of a problem large enough to justify the effort?" (Evans, 1984, 287). This is the nub of the problem and the Ontario Council of Health skirted this key question in its report. It might be better, ultimately, to admit that there is no natural yardstick for determining the optimal allocation of resources for medical resources and leave this task to the political processes that incidentally determines the allocation of resources for other social goods.

The same report also makes quantitative recommendations as to the internal distribution of the health research budget. The sub-allocation is thought of in terms of types of research. It calls for a dramatic increase in public funding for what it calls "cost reduction" and "level of service" research. It also calls for a slightly reduced emphasis on basic research and significantly greater emphasis on applied and developmental biomedical research.

The report is especially notable for its repeated emphasis on a particular allocative framework. "The economic criterion that expected social benefits should be greater than expected social costs if an activity is to be judged useful, provides a rational framework for evaluating the system by which decisions are made about funding in the health research sector. It is also likely to be of use in making decisions about individual projects and therefore should be employed" (Ontario Council of Health, 1973, 19). However, it acknowledges that "expected social benefits cannot be effectively calculated for the basic research component of all types of research one therefore has to concentrate principally on the scientific merit of the project. However, these benefits can and should be calculated for all other categories of health research". (Ontario Council of Health, 1973, 19) The last statement is an astonishing display of economic hubris! With respect to what "can" be done, the underwhelming paucity of such studies to date provides us with a humbling and deflating counterfactual. As for what "should" be done all governments should shudder when they contemplate their research evaluation budgets. Furthermore, despite its emphasis on the economic criterion the report did not apply nor did it attempt to apply this criterion in determining the overall quantum and its internal sub-allocation of resources to be allocated to health research, but chose the use a convenient and questionable yardstick approach for these purposes. Whether this is merely a curious lapse of faith or an admission that the economic criterion cannot really be applied to such crucial questions is not readily apparent from the report. Finally, in terms of its own framework and allocative criteria the report should logically have addressed the issue of micro-allocational determinations first, ahead of the macro-allocation question.

There are, of course, alternative economic approaches to determining the allocation of resources for medical research. Ideally, we would like to have what might be called "ex ante production functions" that relates desired outputs of medical research in the form of information, knowledge and technology to the required inputs as manifested by a wide range of physical capital, scientific-informational capital, equipment and a wide array of human capital. Occasionally, the rhetoric and expectation that often surrounds the announcement of mission-oriented or targeted research often gives the impression of having been implicitly founded on such a construction of an ex ante production function. But such exercises, if they are ever undertaken, can amount to no more than guesswork. Probably the most distinguishing feature of medical research activity is the innate uncertainty between inputs and outputs. It is not at all surprisingly that desired ex ante production functions do not exist. We simply cannot determine a priori how much resources we need to allocate to generate the information and technologies we wish to have (assuming of course that we have a consensus on the desired output of research). In matters of medical research not only is our foresight particularly weak and fuzzy our hindsight is not much stronger. Indeed, we even have great difficulty in establishing ex post production function for medical research. Furthermore the few that have been established are more accurately thought of as ex post production functions of biomedical technology and not medical or even biomedical research as such (Mushkin 1979; Fudenberg, 1983). They do not separate the public investments in medical research from private research that "goes into" the biomedical technology that is being evaluated thus making it difficult to draw the allocative implications for public policy. The conclusions of such analysis reveal a considerable amount of disagreement over the contributions or productivity of biomedical technology where such contributions are measured in terms of reductions in the costs of illness, net benefits over the costs, internal rates of return, and reductions in premature mortality. For example, in contrast to the dismal estimates of some scholars, Mushkin (1979) has concluded that between 30 and 40 percent of the reduction in deaths in the United States since 1900 may be attributable to biomedical innovations and technology.

Some economists insist that the ex post evaluation of medical research is legitimately addressed by evaluating medical technology. It is argued that the isolation of the research from its application is counterproductive if not wrong. Medical research, it is said, is part of a process that involves not only the expansion of knowledge but also its application. Thus, evaluation of research is not separable from evaluation of the uses to which its results are put. The importance of evaluating medical research by its applications and hence its impact on costs and health status has one extremely serious implication for micro-allocation decision-making. It would appear that the peer-review process which assess research projects strictly on scientific merit is inadequate. Instead, at least one if not two additional criteria are urged by some (if not most) economists: projects should be evaluated in terms of their net impact on health care costs or the impact on the health status of the beneficiaries and preferably both (Mushkin, 1979). There should be no doubt that these are onerous and difficult requirements for most research proposals. For reasons that is apparent from the foregoing discussion they are virtually impossible to fulfill in the case of basic research. In fact, the requirements are impractical for many non-basic research as well. It would be better to concentrate on the reform of the peer review process instead, particularly in trying to democratize the decision-making process that is at present dominated by the scientific establishments and their colleagues and counterparts in the government bureaucracies (Strickland, 1978; Etzioni, 1973).

How legitimate is it to assess the effects of past medical research through its resulting medical technology? There are certainly many difficulties in evaluating the contribution of medical technology but perhaps of greater concern is that using medical technology as a proxy for medical research could lead to erroneous conclusions. For instance, the premature application and rapid diffusion of technology of which there are numerous and costly examples would count against discoveries that might later turn out to be highly beneficial and cost effective. The adoption and diffusion of technology is influenced by the incentives structures facing hospitals, the medical profession and the propriety bio-medical firms, which in the context of a universal public health insurance scheme make it virtually costless for providers and consumers to use new technologies irrespective of costs. If our health care system is structured, managed and administered in such a manner as not to assure the deployment of only those technologies that pass some social benefit-cost or other similar criterion, where or on whom do we assign the default? Oversimplifying somewhat, might we not be discrediting the medical research and judging it too harshly for problems and failures that lies elsewhere, most notable of which is the failure to regulate the diffusion of medical technology? There are, of course, other complexities that makes the evaluation of medical research a very difficult and uncertain exercise. There are medical research activities that are of short duration and others of very long duration that have yet to run their course. When do they become subject to an ex post evaluation? How useful are ex post evaluation anyway? Research is a cumulative process whereby discrete bits of information and knowledge may or may not prove to be useful for future research or applications. Then there are serendipitous discoveries and accidental breakthroughs. Medical technologies whether embodied in drugs, devices or diagnostic equipment or the techniques and procedures employed by the health care professions are rarely derivative of one research activity or project or even a few. It is often the culmination of a diverse, independently conducted, set of research endeavours. If despite all of these complications one still insists on evaluating medical research through its resultant medical technologies there remains but one final question: are ex post evaluations of medical technology a sufficiently appropriate guide for planning and determining current allocation of resources and priorities for medical research? While a categorical answer cannot be offered the answer is surely no with respect to most medical research and most definitely so in the case of basic research.

It was argued that while ethical reflections could and do have implications for research priorities they cannot help us determine the quantitative and technical parameters required by the three questions that were set out in the beginning. It was also argued that economic analysis is generally not likely to serve our needs. At best, it has a limited role in assisting us to select specific projects or research activities among alternatives. That is, it has some role in determining the micro-allocation decisions in medical research.

It would appear, thus, that we have to resort to democratic political processes to at least determine the macro-allocation choices and perhaps even some, if not many, micro-allocation decisions. Whether the political processes perform these tasks sufficiently well is an interesting question. The electoral process is far too blunt an instrument to reveal public preferences on such refined, complex and specific matters. Our non-electoral democratic processes are marked by stark inequalities in political voice and power and yet it is these processes that play a major role in the allocation choices the public bureaucracies eventually make. To complicate matters there are important defects in the channels through which public opinion is formed and communicated. There is the ever present risk that many socio-economic groups may be forced into accepting levels of unsatisfied needs that they would not have chosen themselves. Conversely, the outcomes could also entail over-investment in some forms of medical research that favour select scientific and research groups and establishments. There is also a risk that basically accommodationist decision-making processes are established involving the research communities to which public funds are channeled and the bureaucratic and technocratic organs of government. The resulting decision-making processes may be such as to make it difficult if not virtually impossible for a further and meaningful democratic input by the public. The decison-making processes are sometimes such that those who make the key decisions cannot and perhaps even do not attempt to capture society's values and preferences. Bureaucrats in democratic governments are deluded by the thought that the politicians whom they serve are in turn servants of the people, chosen by the people, and that their values reflect society's values. Conceived this way, "the concept of democracy obviously bears quite a lot of normative freight. It is far from clear that the mere fact of electoral competition, often taken as the hallmark of democracy, has enough legitimating force to carry all that weight" (McPherson, 1983, 69). Since the allocative decisions in medical research is ultimately determined through bureaucratic and political processes, the redesign, reform and democratization of the many decision-making bodies and process becomes of critical importance and should take precedence over the refinements in economic analysis and further anguish over ethical criteria that ought to determine research priorities.

Institutional controls and procedural reforms governing decision-making regarding the allocation of resources for medical research is both necessary and desirable. In response to the question of how will research decisions be made, Kass responded (1973, 69): "technocratically and self-servingly if our experience with previous technologies is any guide. Under conditions of laissez-faire, most technologists will pursue techniques and most private industries will pursue profits... the voice of the public interest will have to shout very loudly to be heard about their whispering in the halls of Congress" or parliaments in the case of Canada.

But political reform is not enough. "Nor are clever institutional arrangements. Institutions can be little better than the people who make them work. However worthy our intentions, we are deficient in understanding. In the long run, our hope can only lie in education: in a public educated about the meanings and limits of science and enlightened in its use of technology; in scientists better educated to understand the relationships between science and technology on the one hand, and ethics and politics on the other; in human beings who are as wise in the latter as they are clever in the former" (Kass, 1973, 70).

Concluding Remarks and Reflections

Bioethical issues are receiving unprecedented attention in professional and public media. This is no doubt related to the virtual biomedical revolution we have experienced over the past two decades. Impressive innovation and breakthroughs in the health sciences and technology is increasingly common, offering medical intervention and options that only a few years ago was not possible. The expansion of choice also generates new dilemmas confounding and compounding older dilemmas which have hardly been satisfactorily resolved. Profound technological innovations, for example, in the areas of reproductive biology and genetic engineering, present new moral dilemmas and question our certainty about more or less established values and raise to the fore hitherto dormant ones.

In this study we considered particular dilemmas cast in rather general terms. How should society allocate limited health care resources knowing that no matter what is finally decided, many needs, both ordinary and desperate, will not be met. While a commitment of greater quantities of resources can reduce the amount of unmet needs, society is evidently and understandably reluctant to do so.

One might legitimately ask, what indeed is so special about unmet health care needs when there are unmet needs for virtually all goods and services. What precisely is the source and nature of the dilemma? The answer is both explicitly and implicitly revealed in the foregoing sections. Society does regard "health", and by extension, health care services as "special" and different from other goods and services.

Thus, we have universal program like Medicare based on a highly egalitarian conception of distributive justice. Access rights to health care is associated with important societal values such as equality of opportunity, dignity of persons, equal worth of persons and the exercise of autonomy and informed choice. To the extent that allocation of health care resources "disfavours" some group's or individual's health care needs there is a prima faire question of whether such unmet needs are just and consistent with the societal values referred to above.

Expressions like the "sanctity of life" and "life is of infinite value", which are frequently invoked in discussion about the allocation of resources are, one hopes, not meant as guides to decision-making. Such expressions cannot be sustained in the knowledge that society manifestly limits resources in all kinds of ways, not only to the health care delivery systems, but in other areas such as traffic safety, occupational health and safety and physical environment in ways which result in avoidable or premature death, disability and disease. As explained earlier, for reasons of value-rational behaviour society does on occasion willingly commits huge sums to save a life and gives symbolic credence to such expressions. But that is all such cases are meant to achieve. Society is extremely unwilling to admit explicitly that there is a limit to how much resources should be commited to save a life, even if it pervasively acts in ways that contradicts this sentiment and haphazardly at that (Mooney, 1977).

In the preceeding discussion it was suggested on a number of occasions that economists' concern with allocative efficiency may run foul of society's concerns about ethical values such as distributive justice and equal treatment of all individuals. This is not always the case, however. In any case, economic analysis and techniques cannot readily incorporate as constraints such societal values or ethical principles, though it is possible in some instances to estimate the distribution of burdens and benefits of some resource allocation choices. Biomedical ethicists are similarly not able to offer anything near precise answers to the question of how much and how society should allocate health care resources. This is not the task of bio-ethicists, a task which is in any case beyond any one discipline. All that one should hope for is that the choice, conflicts and compromise that allocative issues inescapably entail are made explicit and brought to light for public discussion and debate. It is in this collective endeavour that economists, ethicists, health policy planners, the professions and many others have important and legitimate roles and functions.

Implicit in a considerable body of bioethical literature is a fear of what we might call the "economic determinism" of ethical standards or principles. Put crudely, it is suggested that concerns about the high economic costs of treating select persons or diseases might lead society to accept immoral and unethical standards of conduct or resource allocation choices. For example, the very high costs of first treating, and then caring for the mentally or physically handicapped neonates for much and sometimes all of their lives, may lead to a greater tolerance if not the encouragement of mercy killing. It would be difficult to "prove" that the increasing tolerance for active and passive euthanasia can be explained by the increasingly costly medical technology and therapy that is involved in the treatment of defective neonates. Similarly, it is also difficult to prove that concerns about economic costs led society to be tolerant of the practice of "do not ressucitate" orders in hospitals. The fact that these are concurrent developments in medicine may make them causally related - i.e. economics determines ethics - in the eyes of many. One could equally infer the reverse, that ethics determines economic costs by pointing out that heroic interventions in the name of "sanctity of life" has led to rapidly rising expenditures. Ethical imperatives such as avoiding killing do have important economic ramifications, as does the refusal to let the terminally ill die. But as always there is disagreement over what our ethical imperatives ought to be and the reasons for the changing views have as much or more to do with other ethical precepts such as respect for patient's autonomy and dignity of the person, than with the economic costs of treating the ill. Also, as was argued earlier it is our concern with distributive justice that justified Medicare, without which we would not have attained the overall commitment of health care resources we observe today. We should also not overlook other explanations, specifically, that both of these developments have quite separate explanations.

We do have some evidence that the fear of "economic determinism" in the sense described here is unwarranted or at least unproven. Thus in a recent survey, Canadians were emphatically against the idea of the costs of medical care determining whether or not to treat a "severely handicapped newborn" (Manga and Charette, 1986). Their acceptance (in excess of 40 percent) of passive euthanasia has mainly to do with quality of life considerations. Indeed, it is the latter factor that is often the dominant argument of those who advocate the merciful killing of severely handicapped newborns (Kuhse and Singer, 1985; Magnet, 1985). Also, even when the high costs of treatment is cited as one factor that argues for a different allocation of resources, the concern is rarely to simply save money per se, but to reallocate resources to benefit others in need (eg. handicapped children) or the persons or groups themselves (eg. the aged through the provision of other social and health services). Furthermore, in the case of the aged, there is reason to believe that the aged themselves would concur with the developments in medical practice and see them as consonant with their autonomy and respect for their preferences. It is easy to see economic motivations in ethical standards or values we happen not to favour. Such standards can thus be seen as not only unethical but vulgar at that.

There is emerging, however, a greater appreciation and consensus of the need for a more deliberate and considered allocation of health care resources. For example, there is an increasing and widespread recognition of the necessity to regulate the diffusion of medical technology. Indeed, the controversies surrounding this subject are now concentrated more on issues such as the extent, nature, institutional form and procedural aspects of technology regulation and less on whether to regulate or not.

While there are a number of arguments advanced to justify the creation of formal institutions to regulate medical technology, the dominant rationale appears to be that relating to the effect of technology on health care costs. The widespread diffusion and adoption of new medical diagnostic and treatment procedures and technology is frequently implicated as a significant factor in rising health care costs (Russel, 1979; Feldstein and Taylor, 1977).

Calls for technology assessment have also been justified on the need to consider the ethical implications of introducing new medical technologies and procedures as reflected in the panel of experts established by the National Heart and Lung Institute to examine the macroallocation and microallocation policy questions surrounding the development of the totally implantable artificial heart (Jonsen, 1973). Another frequently cited reason for regulating medical technology is that the widespread diffusion of new technology and procedures often takes place without adequate evaluation in terms of efficacy or cost-effectiveness - the latter of course being even more infrequent than the former (Cochrane, 1972). Diffusion sometimes continues despite the existence of evidence that casts doubts as to its efficacy or cost-effectiveness, as evident in the case of intensive care units, for example, for patients with acute pulmonary edema or burn case (Linn, Stephenson, Bergstresser and Smith, 1979). In a world where scarcity co-exists with troubling unmet needs, wastage of resources is not only allocative inefficient but may quite properly be regarded as unethical as well.

Indeed, some ethicists have suggested that give the uncertainties about the effects of medical technology in terms of efficacy, costs, and its implications on ethical values and norms "we should, perhaps, presume that technology is guilty until proven innocent. The burden of proof and of going forward should be placed on the advocates of a technology who hold that its benefits will outweigh its harms. Such a shift in the onus probandi would not signal opposition to technological development. It would only indicate that we have not paid sufficiently attention to the harmful side effects and second-order consequences in technological development and that we intend to correct this defiency" (Childress, 1981, 109).

Regulating medical technology is complex and is likely to have far-reaching consequences, beyond the establishment of rational mechanisms to sort out acceptable from unacceptable technology and procedures. There are highly important ethical issues involved in controlling the use of medical technology. But the argument for regulations are compelling, and governments have little choice in the long run but to meet the challenge. It is in such endeavours that society will, if nothing else, better understand the economic and ethical imperatives, choices and compromise it has to decide upon.

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Ce programme avait notamment pour objectifs de contribuer à la compréhension des problèmes actuels du système des services de santé et des services sociaux, de vérifier l'impact de diverses hypothèses de solutions et, à plus long terme, de stimuler la recherche dans ce domaine.

Afin de rendre compte de ce programme de recherche, la Commission a décidé, sur recommandation du comité scientifique, de publier une collection des synthèses critiques et des recherches. Le présent document s'inscrit dans le cadre de cette collection.